



ENVIRONMENTAL & ENGINEERING CONSULTANTS

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Portland, Oregon 97239

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July 21, 2006
Project No. 0100.01.02

Mr. Mark Pugh
Oregon Department of Environmental Quality—Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201

Re: May 2006 Stormwater Sampling Event
Advanced American Construction Properties, LLC
8444 NW St. Helens Road
Portland, Oregon

Dear Mark:

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster & Alongi, Inc. is submitting the results of the May 2006 stormwater sampling event at the above-referenced site. Quarterly stormwater sampling is required as a condition of the November 16, 2004 (recorded November 24, 2004), Prospective Purchaser Agreement (PPA) between AACP and the Oregon Department of Environmental Quality (DEQ). Pursuant to Sections 2B(1) and (2) of the PPA, AACP will implement source control measures and best management practices outlined in the October 2004 Source Control Plan, including installation of a stormwater management system during site development, and, once constructed, quarterly sampling of the system for one year for analysis of metals, polycyclic aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH), as required by the PPA.

The attached figure shows the layout of the stormwater system. DEQ requested that a sample be collected from the outfall to the Willamette River. Because the outfall was submerged, a sample was collected from the storm line immediately downstream of the oil/water separator (AF-1); this location was the closest accessible location to the outfall. Photographs of the sample location are attached. The stormwater sample was analyzed for metals by U.S. Environmental Protection Agency (USEPA) Method 6010/6020; for PAHs by USEPA Method 8270C-SIM; and for TPH by NWTPH-Gx and -Dx for gasoline- and diesel-range organics, respectively (see Tables 1 through 3 and the attached laboratory analytical report). A quality assurance/quality control review of the data is attached. The data are acceptable for the intended use, with the appropriate data qualifiers assigned. The results were screened against the screening level values (SLVs) for surface water in the 2005 DEQ/USEPA Joint Source Control Strategy guidance. All detections were below the

Mr. Mark Pugh
July 21, 2006
Page 2

Project No. 0100.01.02

SLVs. Some of the method reporting limits were greater than the SLVs, but are the lowest verifiable and defensible levels achievable in the laboratory.

Sincerely,

Maul Foster & Alongi, Inc.



Anna St. John, RG
Project Manager



Brian Fauth
Staff Environmental Scientist

Attachments: Limitations
Tables
Figure
Photographs
Field Sampling Data Sheet
QA/QC Memorandum

cc: Dee Burch and Scott Burgess, AACP

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

TABLES

Table Notes
Advanced American Construction Properties, LLC
Portland, Oregon

Bold = analytical result or method reporting limit exceeds SLV. MRLs represent lowest defensible level laboratory can achieve.
DEQ = Oregon Department of Environmental Quality.
feet bgs = feet below ground surface.
JSCS = Joint Source Control Strategy (Portland Harbor—Sept. 2005)
mg/L = milligrams per liter.
µg/L = micrograms per liter.
NV = no value.
SLV = screening level value.
U = Analysis was conducted, but analyte was not detected above reported sample quantitation limit.
USEPA = U.S. Environmental Protection Agency.
^aSLV is the lowest value presented in Table 3-1 of the JSCS.

Table 1
Total Metals in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Sample ID	Lab Sample ID	Date Collected	Depth (feet bgs)	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
USEPA / DEQ JSCS Screening Level Values ^a					0.014	0.094	100	2.9	0.54	16	32.7
AF1	AFI-052606	0605148-01B	5/26/2006	12	1.0 U	0.10 U	5 U	1.46	0.181	5.0 U	18.2

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene
USEPA / DEQ JSCS Screening Level Values ^a				0.2	0.2	0.2	0.0018	0.0018	0.0018
AF1	0605148-01B	5/26/2006	12	0.0545 U	0.0545 U	0.0545 U	0.0545 U	0.0545 U	0.0545 U

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Benzo(ghi)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene
USEPA / DEQ JSCS Screening Level Values ^a				0.2	0.0018	0.0018	0.0018	0.2
AF1	0605148-01B	5/26/2006	12	0.0545 U	0.0545 U	0.0545 U	0.0545 U	0.0545 U

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
USEPA / DEQ JSCS Screening Level Values ^a				0.2	0.0018	0.2	0.2	0.2
AF1	0605148-01B	5/26/2006	12	0.0654	0.0545 U	0.0654	0.153	0.0545 U

Table 3
Total Petroleum Hydrocarbons in Stormwater (mg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Diesel	Gasoline	Lube-Oil-Range Hydrocarbons
AF1	0605148-01B	5/26/2006	12	0.543	0.10 U	0.701

FIGURE

GROUP
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Civil Engineering
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Client:

AAC.LOGO.TIF

Project:
NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.

General Contractor
ERLO MCCORMACK PACIFIC
190 SW Scholberg Rd
Portland, Oregon 97223
Phone: (503) 624-2090
AX: (503) 639-4134

Landscape Architect
REDAN ENVIRONMENTAL
DESIGN
13 SW Alder
Lezonline B
Portland Oregon 97205
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WITHOUT PRIOR WRITTEN PERMISSION

REVISIONS:			
NO.	DATE	REVISION	BY
1	X	08.16.05	
2	X	IN PROGRESS	

SHEET TITLE:
UTILITY PLAN

DRAWN BY: RJH

CHECKED BY:

SHEET

C2.3

JOB NO. 2040378.00

PHOTOGRAPHS



Photo 1: Stormwater sampling location AF-1; looking north.



Photo 2: Nearest to farthest manholes: Inlet side to oil/water separator, outlet side to oil/water separator, stormwater sampling location AF-1; looking north.



Photo 3: Nearest to farthest manholes: Last manhole before oil/water separator, inlet to oil/water separator, outlet to oil/water separator; looking north.



Photo 4: Last manhole before oil/water separator; looking south.

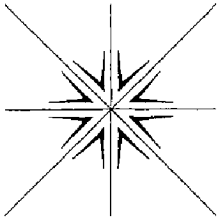


Photo 5: Stormwater sampling well AF-1, water running through; viewing inside of well.



Photo 6: Stormwater sampling well AF-1, during sampling; viewing inside of well.

ANALYTICAL REPORT



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

June 01, 2006

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201
TEL: (971) 544-2139
FAX (971) 544-2140

RE: Advanced American / 0100.01.02

Dear Anna St. John:

Order No.: 0605148

Specialty Analytical received 1 sample on 5/27/2006 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

AAC000019

Specialty Analytical

Date: 01-Jun-06

CLIENT: Maul, Foster & Alongi
Project: Advanced American / 0100.01.02

Lab Order: 0605148

Lab ID: 0605148-01
Client Sample ID: AFI-052606

Collection Date: 5/26/2006 10:35:00 AM

Matrix: STORM WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: mkh
Diesel	0.543	0.264		mg/L	1	5/31/2006
Lube Oil	0.701	0.527		mg/L	1	5/31/2006
Surr: o-Terphenyl	93.6	50-150		%REC	1	5/31/2006
NWTPH-GX						
		NWTPH-GX				Analyst: das
Gasoline	ND	100		µg/L	1	5/27/2006
Surr: BFB	106	50-150		%REC	1	5/27/2006
TOTAL METALS BY ICP						
		E6010A				Analyst: zau
Chromium	ND	0.00500		mg/L	1	5/30/2006 6:03:50 PM
Nickel	ND	0.00500		mg/L	1	5/30/2006 6:03:50 PM
Zinc	0.0182	0.0100		mg/L	1	5/30/2006 6:03:50 PM
TOTAL METALS BY ICP/MS						
		SW6020				Analyst: zau
Arsenic	ND	1.00		ug/L	1	5/31/2006 2:50:00 PM
Cadmium	ND	0.100		ug/L	1	5/31/2006 2:50:00 PM
Copper	1.46	0.500		ug/L	1	5/31/2006 2:50:00 PM
Lead	0.181	0.100		ug/L	1	5/31/2006 2:50:00 PM
LOW LEVEL PAH BY GC/MS OARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Acenaphthylene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Anthracene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Benz(a)anthracene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Benzo(a)pyrene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Benzo(b)fluoranthene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Benzo(g,h,i)perylene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Benzo(k)fluoranthene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Chrysene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Dibenz(a,h)anthracene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Fluoranthene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Fluorene	0.0654	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Naphthalene	0.0654	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Phenanthrene	0.153	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Pyrene	ND	0.0545		µg/L	1	5/31/2006 11:11:00 PM
Surr: 2-Fluorobiphenyl	84.3	18.6-106		%REC	1	5/31/2006 11:11:00 PM
Surr: Nitrobenzene-d5	119	17-130		%REC	1	5/31/2006 11:11:00 PM
Surr: p-Terphenyl-d14	123	39.6-131		%REC	1	5/31/2006 11:11:00 PM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0605148
 Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID	MBLK-15878	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/30/2006	Run ID:	TJAIRIS_060530B
Client ID:	ZZZZZ	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394135
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.0074	0.00500									
Nickel	0.001	0.00500									
Zinc	0.0055	0.0100									

J
J ✓

Sample ID	LCS-15878	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/30/2006	Run ID:	TJAIRIS_060530B
Client ID:	ZZZZZ	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394136
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.2613	0.00500	0.25	0	105	93.9	113	0	0		B
Nickel	0.2542	0.00500	0.25	0	102	93.4	111	0	0		
Zinc	0.5233	0.0100	0.5	0	105	92.3	111	0	0		

Sample ID	0605148-01CMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/30/2006	Run ID:	TJAIRIS_060530B
Client ID:	AFI-052606	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394139
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.2669	0.00500	0.25	0	107	93.4	112	0	0		B
Nickel	0.2588	0.00500	0.25	0	104	88.5	112	0	0		
Zinc	0.5504	0.0100	0.5	0.0182	106	93	110	0	0		

Sample ID	0605148-01CMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/30/2006	Run ID:	TJAIRIS_060530B
Client ID:	AFI-052606	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394140
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.2646	0.00500	0.25	0	106	93.4	112	0.2669	0.865	20	B
Nickel	0.2516	0.00500	0.25	0	101	88.5	112	0.2588	2.82	20	
Zinc	0.54	0.0100	0.5	0.0182	104	93	110	0.5504	1.91	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0605148
 Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID	0605148-01CDUP	SampType:	DUP	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/30/2006	Run ID:	TJAIRIS_060530B
Client ID:	AFI-052606	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394138
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.0015	0.00500	0	0	0	0	0	0	0	20	J
Nickel	ND	0.00500	0	0	0	0	0	0	0	20	
Zinc	0.0176	0.0100	0	0	0	0	0	0.0182	3.35	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060530B
Client ID:	ZZZZZ	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394134
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2595	0.00500	0.25	0	104	90	110	0	0		B
Nickel	0.2517	0.00500	0.25	0	101	90	110	0	0		
Zinc	0.5191	0.0100	0.5	0	104	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060530B
Client ID:	ZZZZZ	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394143
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2652	0.00500	0.25	0	106	90	110	0	0		B
Nickel	0.256	0.00500	0.25	0	102	90	110	0	0		
Zinc	0.5275	0.0100	0.5	0	106	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060530B
Client ID:	ZZZZZ	Batch ID:	15878	TestNo:	E6010A			Analysis Date:	5/30/2006	SeqNo:	394133
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2524	0.00500	0.25	0	101	90	110	0	0		B
Nickel	0.2496	0.00500	0.25	0	99.8	90	110	0	0		
Zinc	0.5104	0.0100	0.5	0	102	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0605148
Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	MBLK-15889	SampType:	MBLK	TestCode:	6020_W	Units:	ug/L	Prep Date:	5/30/2006	Run ID:	ICPMS_060531C
Client ID:	ZZZZZ	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394453
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	1.00									
Cadmium	ND	0.100									
Copper	ND	0.500									
Lead	ND	0.100									

Sample ID	LCS-15889	SampType:	LCS	TestCode:	6020_W	Units:	ug/L	Prep Date:	5/30/2006	Run ID:	ICPMS_060531C
Client ID:	ZZZZZ	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394454
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	49.13	1.00	50	0	98.3	80	120	0	0		
Cadmium	50.37	0.100	50	0	101	80	120	0	0		
Copper	50.41	0.500	50	0	101	80	120	0	0		
Lead	50.9	0.100	50	0	102	80	120	0	0		

Sample ID	0605148-01CMS	SampType:	MS	TestCode:	6020_W	Units:	ug/L	Prep Date:	5/30/2006	Run ID:	ICPMS_060531C
Client ID:	AFI-052606	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394458
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	50.82	1.00	50	0.3319	101	70	130	0	0		
Cadmium	50.13	0.100	50	0	100	70	130	0	0		
Copper	52.41	0.500	50	1.462	102	70	130	0	0		
Lead	52.06	0.100	50	0.1806	104	70	130	0	0		

Sample ID	0605148-01CMSD	SampType:	MSD	TestCode:	6020_W	Units:	ug/L	Prep Date:	5/30/2006	Run ID:	ICPMS_060531C
Client ID:	AFI-052606	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394459
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	51.33	1.00	50	0.3319	102	70	130	50.82	0.999	20	
Cadmium	50.73	0.100	50	0	101	70	130	50.13	1.19	20	
Copper	52.8	0.500	50	1.462	103	70	130	52.41	0.741	20	
Lead	52.46	0.100	50	0.1806	105	70	130	52.06	0.765	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0605148
Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	0605148-01CDUP	SampType:	DUP	TestCode:	6020_W	Units:	ug/L	Prep Date:	5/30/2006	Run ID:	ICPMS_060531C
Client ID:	AFI-052606	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394457
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.3139	1.00	0	0	0	0	0	0.3319	0	20	J
Cadmium	ND	0.100	0	0	0	0	0	0	0	20	
Copper	1.445	0.500	0	0	0	0	0	1.462	1.17	20	
Lead	0.1564	0.100	0	0	0	0	0	0.1806	14.4	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	ug/L	Prep Date:		Run ID:	ICPMS_060531C
Client ID:	ZZZZZ	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394456
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.01	1.00	50	0	102	90	110	0	0		
Cadmium	50.99	0.100	50	0	102	90	110	0	0		
Copper	53.05	0.500	50	0	106	90	110	0	0		
Lead	51.74	0.100	50	0	103	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	ug/L	Prep Date:		Run ID:	ICPMS_060531C
Client ID:	ZZZZZ	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394467
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.24	1.00	50	0	102	90	110	0	0		
Cadmium	49.81	0.100	50	0	99.6	90	110	0	0		
Copper	49.37	0.500	50	0	98.7	90	110	0	0		
Lead	52.3	0.100	50	0	105	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6020_W	Units:	ug/L	Prep Date:		Run ID:	ICPMS_060531C
Client ID:	ZZZZZ	Batch ID:	15889	TestNo:	SW6020			Analysis Date:	5/31/2006	SeqNo:	394452
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.73	1.00	50	0	101	90	110	0	0		
Cadmium	50.73	0.100	50	0	101	90	110	0	0		
Copper	52.13	0.500	50	0	104	90	110	0	0		
Lead	51.44	0.100	50	0	103	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0605148
 Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_W

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:	5/30/2006	Run ID:	GC-M_060531B	
Client ID:	ZZZZZ	Batch ID:	15883	TestNo:	NWTPH-Dx			Analysis Date:	5/31/2006	SeqNo:	394428	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		0.1505	0.250									J
Lube Oil		0.2045	0.500									J
Surr:o-Terphenyl		0.4125	0	0.5	0	82.5	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:	5/30/2006	Run ID:	GC-M_060531B	
Client ID:	ZZZZZ	Batch ID:	15883	TestNo:	NWTPH-Dx			Analysis Date:	5/31/2006	SeqNo:	394429	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		2.22	0.250	2.505	0.1505	82.6	70	130	0	0		
Lube Oil		2.475	0.500	2.505	0.2045	90.6	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:		Run ID:	GC-M_060531B	
Client ID:	ZZZZZ	Batch ID:	15883	TestNo:	NWTPH-Dx			Analysis Date:	5/31/2006	SeqNo:	394430	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		5.685	0.250	5	0	114	85	115	0	0		
Lube Oil		3.695	0.500	3.5	0	106	85	115	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:		Run ID:	GC-M_060531B	
Client ID:	ZZZZZ	Batch ID:	15883	TestNo:	NWTPH-Dx			Analysis Date:	5/31/2006	SeqNo:	394434	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		10.25	0.250	10	0	103	85	115	0	0		
Lube Oil		5.01	0.500	5	0	100	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0605148
Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_W

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-H_060527B			
Client ID:	ZZZZZ	Batch ID:	15877	TestNo:	NWTPH-Gx			Analysis Date:	5/27/2006	SeqNo:	393817			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		ND		100										
Surr: BFB		108.1		0	100	0		108	50	150	0		0	

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-H_060527B			
Client ID:	ZZZZZ	Batch ID:	15877	TestNo:	NWTPH-Gx			Analysis Date:	5/27/2006	SeqNo:	393818			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2632		100	2500	0		105	74.4	128	0		0	

Sample ID	0605136-05ADUP	SampType:	DUP	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	5/26/2006	Run ID:	GC-H_060527B			
Client ID:	ZZZZZ	Batch ID:	15877	TestNo:	NWTPH-Gx			Analysis Date:	5/27/2006	SeqNo:	393820			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		4572		500	0	0		0	0	0	4612	0.882	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-H_060527B			
Client ID:	ZZZZZ	Batch ID:	15877	TestNo:	NWTPH-Gx			Analysis Date:	5/27/2006	SeqNo:	393816			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2483		100	2500	0		99.3	80	120	0		0	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-H_060527B			
Client ID:	ZZZZZ	Batch ID:	15877	TestNo:	NWTPH-Gx			Analysis Date:	5/27/2006	SeqNo:	393828			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2959		100	3000	0		98.6	80	120	0		0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0605148
 Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_W

Sample ID	MB-15884	SampType:	MBLK	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:	5/30/2006	Run ID:	5975Q_060531B
Client ID:	ZZZZZ	Batch ID:	15884	TestNo:	8270SIM			Analysis Date:	5/31/2006	SeqNo:	394292
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.0500									
Acenaphthylene	ND	0.0500									
Anthracene	ND	0.0500									
Benz(a)anthracene	0.01	0.0500									J
Benzo(a)pyrene	ND	0.0500									
Benzo(b)fluoranthene	ND	0.0500									
Benzo(g,h,i)perylene	ND	0.0500									
Benzo(k)fluoranthene	ND	0.0500									
Chrysene	ND	0.0500									
Dibenz(a,h)anthracene	ND	0.0500									
Fluoranthene	0.01	0.0500									J
Fluorene	ND	0.0500									
Indeno(1,2,3-cd)pyrene	ND	0.0500									
Naphthalene	ND	0.0500									
Phenanthrene	ND	0.0500									
Pyrene	0.01	0.0500									J
Surr: 2-Fluorobiphenyl	51.51	1.00	100	0	51.5	18.6	106	0	0		
Surr: Nitrobenzene-d5	68.41	1.00	100	0	68.4	17	130	0	0		
Surr: p-Terphenyl-d14	98.52	1.00	100	0	98.5	39.6	131	0	0		

Sample ID	LCS-15884	SampType:	LCS	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:	5/30/2006	Run ID:	5975Q_060531B
Client ID:	ZZZZZ	Batch ID:	15884	TestNo:	8270SIM			Analysis Date:	5/31/2006	SeqNo:	394293
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	1.71	0.0500	2.5	0	68.4	35.1	100	0	0		
Benzo(g,h,i)perylene	2.44	0.0500	2.5	0	97.6	20.8	120	0	0		
Chrysene	2.15	0.0500	2.5	0	86	39.1	119	0	0		
Naphthalene	1.39	0.0500	2.5	0	55.6	25.6	106	0	0		
Phenanthrene	1.87	0.0500	2.5	0	74.8	38.1	106	0	0		
Pyrene	2.38	0.0500	2.5	0.01	94.8	41.3	118	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0605148
 Project: Advanced American/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_W

Sample ID	LCSD-15884	SampType:	LCSD	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:	5/30/2006	Run ID:	5975Q_060531B
Client ID:	ZZZZZ	Batch ID:	15884	TestNo:	8270SIM			Analysis Date:	5/31/2006	SeqNo:	394294
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	1.65	0.0500	2.5	0	66	35.1	100	1.71	3.57	20	
Benzo(g,h,i)perylene	2.29	0.0500	2.5	0	91.6	20.8	120	2.44	6.34	20	
Chrysene	2.06	0.0500	2.5	0	82.4	39.1	119	2.15	4.28	20	
Naphthalene	1.38	0.0500	2.5	0	55.2	25.6	106	1.39	0.722	20	
Phenanthrene	1.83	0.0500	2.5	0	73.2	38.1	106	1.87	2.16	20	
Pyrene	2.33	0.0500	2.5	0.01	92.8	41.3	118	2.38	2.12	20	

Sample ID	CCV-15884	SampType:	CCV	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:		Run ID:	5975Q_060531B
Client ID:	ZZZZZ	Batch ID:	15884	TestNo:	8270SIM			Analysis Date:	5/31/2006	SeqNo:	394291
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	1.9	0.0500	2	0	95	70	130	0	0		
Acenaphthylene	1.93	0.0500	2	0	96.5	70	130	0	0		
Anthracene	1.98	0.0500	2	0	99	70	130	0	0		
Benz(a)anthracene	1.94	0.0500	2	0	97	70	130	0	0		
Benzo(a)pyrene	2.07	0.0500	2	0	104	70	130	0	0		
Benzo(b)fluoranthene	2.01	0.0500	2	0	101	70	130	0	0		
Benzo(g,h,i)perylene	2.14	0.0500	2	0	107	70	130	0	0		
Benzo(k)fluoranthene	1.95	0.0500	2	0	97.5	70	130	0	0		
Chrysene	1.84	0.0500	2	0	92	70	130	0	0		
Dibenz(a,h)anthracene	2.13	0.0500	2	0	106	70	130	0	0		
Fluoranthene	2.08	0.0500	2	0	104	70	130	0	0		
Fluorene	2.09	0.0500	2	0	104	70	130	0	0		
Indeno(1,2,3-cd)pyrene	2.13	0.0500	2	0	106	70	130	0	0		
Naphthalene	1.8	0.0500	2	0	90	70	130	0	0		
Phenanthrene	1.9	0.0500	2	0	95	70	130	0	0		
Pyrene	2.24	0.0500	2	0	112	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

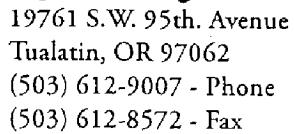
S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 8 of 8

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.



Page ____ of ____

Contact Person/Project Manager ANNA STJOHN
Company MAULFOSTER + ALONGI
Address 3121 SW MOODY AVE STE 200
PORTLAND OR 97239
Phone 971 544 2139 Fax 971-544 2140
Project No. 0100.01.02 Project Name ADVANCED AMERICAN
Invoice To ADVANCED AMERICAN CONSTRUCT P.O. No.

Rush Analyses Must Be Scheduled With The Lab In Advance

AAC000030

FIELD SAMPLING DATA SHEET

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	RGA				
Project Name	Advanced American Construction	Sampling Date	5/26/2006				
Sampling Event	2nd Qtr Stormwater	Sample Name	AF1-052606				
Sub Area		Sample Depth	12				
FSDS QA:	AMJ 05/30/2006	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					BTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	10:35	--	--	7.56	13.3	83.5	--	--	5.21

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	10:35:00 AM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature Brian J. Paul

AAC000032

**DATA QUALITY ASSURANCE/QUALITY CONTROL
MEMORANDUM**

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

ADVANCED AMERICAN CONSTRUCTION PROPERTIES, LLC

Stormwater Sampling—May 2006

0100.01.02

This report reviews the analytical results for a storm water sample collected by the Maul Foster & Alongi, Inc. project team on the Advanced American Construction Properties, LLC site at 8444 NW St. Helens Road in Portland, Oregon. The sample was collected in May 2005.

Specialty Analytical (SA) in Tualatin, Oregon, performed the analysis. SA report number 0605148r1 was reviewed. The analyses performed are listed below.

Analysis	Reference
Diesel and lube oil	NWTPH-Dx
Gasoline-range organics	NWTPH-Gx
Total metals	USEPA 6010/6020
Polycyclic aromatic hydrocarbons	USEPA 8270 SIM
NOTES: NWTPH = Northwest Total Petroleum Hydrocarbons SIM = selected ion monitoring USEPA = U.S. Environmental Protection Agency	

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable parts of USEPA procedures (USEPA, 1994, 1999), and appropriate laboratory and method-specific guidelines (SA, 2006; USEPA, 1986). Data-validation procedures were modified, as appropriate, to accommodate quality-control requirements for methods not specifically addressed by the functional guidelines (i.e., hydrocarbon analyses).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Holding Times, Preservation, and Sample Storage

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Blanks

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. One analyte (chromium) was detected during method blank analyses. The reviewer took no action because the associated sample was non-detect for chromium. No other target analytes were detected above the SA reporting limits.

Equipment Rinsate Blanks

Rinsate blanks were not submitted for this sample set.

Surrogate Recovery Results

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogates were extracted and analyzed at the required frequency. All surrogate percent recoveries were within acceptance limits.

Matrix Spike/Matrix Spike Duplicate Results

MS/MSD results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. All percent recoveries and relative percent differences (RPDs) were acceptable. All percent recoveries and RPDs were acceptable.

Laboratory Control Sample / Laboratory Control Sample Duplicate Results

A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) is spiked with target analytes to provide information on laboratory accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency. All LCS/LCSD analytes were within acceptance limits for percent recovery and RPDs.

Laboratory Duplicate Results

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. All RPDs were within SA acceptance limits.

Field Duplicate Results

Field duplicate samples were not analyzed for this location.

Reporting Limits

SA used routine method reporting limits to quantify the analytical results.

Data Package

The data packages were reviewed for transcription errors, omissions, or anomalies. None was found.

REFERENCES

- SA. 2006. Quality assurance manual. Specialty Analytical, Tualatin, Oregon.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).
- USEPA. 1994. USEPA contract laboratory program, national functional guidelines for inorganics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA 540/R-94/013. February.
- USEPA. 1999. USEPA contract laboratory program, national functional guidelines for organics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA540/R-99/008. October.

December 27, 2006
Project No. 0100.01.02

Mr. Mark Pugh
Oregon Department of Environmental Quality--Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201

Re: November 2006 Stormwater Sampling Event
Advanced American Construction Properties, LLC
8444 NW St. Helens Road
Portland, Oregon

Dear Mark:

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster & Alongi, Inc. is submitting the results of the November 2006 stormwater sampling event at the above-referenced site. Quarterly stormwater sampling is required as a condition of the November 16, 2004 (recorded November 24, 2004), Prospective Purchaser Agreement (PPA) between AACP and the Oregon Department of Environmental Quality (DEQ). Pursuant to Sections 2B(1) and (2) of the PPA, AACP will implement source control measures and best management practices outlined in the October 2004 Source Control Plan, including quarterly sampling of a stormwater management system for one year for analysis of metals, polycyclic aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH), as required by the PPA.

The attached figure shows the layout of the stormwater system. DEQ requested that a sample be collected from the outfall to the Willamette River. Because the outfall was submerged, a sample was collected from the storm line immediately downstream of the oil/water separator (AF-1); this location provides the closest access to the outfall.

The stormwater sample was analyzed for metals by U.S. Environmental Protection Agency (USEPA) Method 6010/6020; for PAHs by USEPA Method 8270C-SIM; and for TPH by NWTPH-Gx and -Dx for gasoline- and diesel-range organics, respectively (see Tables 1 through 3 and the attached laboratory analytical report).

A quality assurance/quality control review of the data is attached. The data are acceptable for the intended use, with the appropriate data qualifiers assigned.

Mr. Mark Pugh
December 27, 2006
Page 2

Project No. 0100.01.02

The results were screened against the screening level values (SLVs) for surface water specified [or similar] in the 2005 DEQ/USEPA Joint Source Control Strategy guidance. All detections were below the ecological SLVs, and also were below the human health SLVs, except for three PAHs: Benzo(a)anthracene, benzo(b)fluoranthene, and chrysene were detected between the laboratory method reporting limits and the method detection limits. Values between these laboratory limits are considered estimated. Some of the method reporting limits were higher than the SLVs, but these are the lowest verifiable and defensible levels achievable in the laboratory. The November 2006 results are generally similar to or lower than May 2006 results.

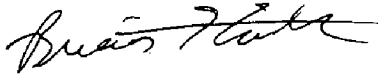
Please call us or Scott Burgess at AACP if you have any questions.

Sincerely,

Maul Foster & Alongi, Inc.



Anna St. John, RG
Project Manager



Brian Fauth
Staff Environmental Scientist

Attachments: Figure
Tables
Laboratory Analytical Report
Data Quality Assurance/Quality Control Memorandum
Field Sampling Data Sheet

cc: Dee Burch and Scott Burgess, AACP

FIGURE

GROUP MACKENZIE
Civil Engineering
Structural Engineering
Transportation Planning
Portland OR
503.224.8560
Verona WA
360.684.7879
Architecture
Interior Design
Land Use Planning
Tacoma WA
253.471.0551
Seattle WA
206.749.5

Client

AAC.LOGO.TIF

Project
NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.

General Contractor
PERLO MCCORMACK PACIFIC
7190 SW Sandburg Rd.
Portland, Oregon 97223
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Landscape Architect
VERDIAN ENVIRONMENTAL
DESIGN
813 SW Alder
Mezzanine B
Portland Oregon 97205
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GROUP MACKENZIE 2005
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WITHOUT PRIOR WRITTEN PERMISSION

REVISIONS:		
NO.	REVISIONS	REVISION DATE
1	X	08.16.05
2	X	IN PROGRESS

SHEET TITLE:
UTILITY PLAN

DRAWN BY: RJH

CHECKED BY:
SHEET

C2.3

JOB NO. 2040378.00

TABLES

Table Notes
Advanced American Construction Properties, LLC
Portland, Oregon

BOLD indicates that result (detection or MRL) exceeds human health screening level value.
Metals and polycyclic hydrocarbons are reported to MDL.
DEQ = Oregon Department of Environmental Quality.
feet bgs = feet below ground surface.
J = estimated; results between the MDL and MRL were flagged.
JSCS = Joint Source Control Strategy (Portland Harbor—Sept. 2005)
mg/L = milligrams per liter.
MDL = method detection limit.
MRL = method reporting limit.
µg/L = micrograms per liter.
NV = no value.
SLV = screening level value
U = analysis was conducted, but analyte was not detected above reported sample quantitation limit.
UJ = analyte was not detected above the MDL; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the
USEPA = U.S. Environmental Protection Agency.

Table 1
Total Metals in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Sample	Lab Sample	Date Collected	Depth (feet bgs)	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological					3.1	0.094	NV	2.7	0.54	16	33
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health					0.014	5	100	1,300	15	460	2,600
AF1	AFI-052606	0605148-01	5/26/2006	12	0.33 J	0.019 UJ	0.738 UJ	1.46	0.181	0.484 UJ	18.2
	AFI-110706	0611043-01A	11/7/2006	12	0.028 UJ	0.019 UJ	0.738 UJ	1.28	0.256	0.484 UJ	18.7

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				520	NV	0.73	0.027	0.014	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.2	0.2	0.0018	0.0018	0.0018
AF1	0605148-01	5/26/2006	12	0.033 J	0.00980 UJ	0.033 J	0.011 J	0.00654 UJ	0.00545 UJ
	0611043-01A	11/7/2006	12	0.00569 UJ	0.00854 UJ	0.00569 UJ	0.0095 J	0.00569 UJ	0.0095 J

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Benzo(ghi)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				NV	NV	NV	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.0018	0.0018	0.0018	0.2
AF1	0605148-01	5/26/2006	12	0.011 J	0.00871 UJ	0.011 J	0.00763 UJ	0.044 J
	0611043-01A	11/7/2006	12	0.0095 J	0.00759 UJ	0.0095 J	0.00664 UJ	0.0095 J

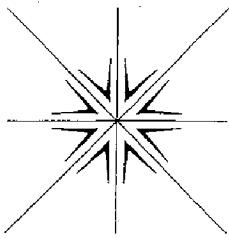
Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				3.9	NV	12	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.0018	0.2	0.2	0.2
AF1	0605148-01	5/26/2006	12	0.0654	0.00436 UJ	0.0654	0.153	0.033 J
	0611043-01A	11/7/2006	12	0.00569 UJ	0.0038 UJ	0.0569	0.0104 UJ	0.019 J

Table 3
Total Petroleum Hydrocarbons in Stormwater (mg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample	Date Collected	Depth (feet bgs)	Gasoline	Diesel	Lube-Oil-Range Hydrocarbons
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				NV	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				NV	NV	NV
AF1	0605148-01	5/26/2006	12	0.10 U	0.543	0.701
	0611043-01A	11/7/2006	12	0.238 U	0.10 U	0.477 U

LABORATORY ANALYTICAL REPORT



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

November 14, 2006

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201
TEL: (971) 544-2139
FAX: (971) 544-2140

RE: Advanced American / 0100.01.01

Dear Anna St. John:

Order No.: 0611043

Specialty Analytical received 1 sample on 11/7/2006 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 14-Nov-06

CLIENT: Maul, Foster & Alongi
Project: Advanced American / 0100.01.01
Lab Order: 0611043

CASE NARRATIVE

The percent recovery for Acenaphthene in the LCS for PAHs by EPA 8270 SIM exceeded control limits (low recovery). All compounds exceeded control limits for precision (%RPD) in the LCSD. No additional volume was available for re-extraction..

Specialty Analytical

Date: 30-Nov-06

CLIENT: Maul, Foster & Alongi

Client Sample ID: AFI-110706

Lab Order: 0611043

Collection Date: 11/7/2006 1:00:00 PM

Project: Advanced American / 0100.01.01

Lab ID: 0611043-01

Matrix: STORMWATER

Analyses	Result	Qual	MDL	Limit	Units	DF	Date Analyzed
TOTAL METALS BY ICP							Analyst: zau
Chromium	ND		0.000738	0.00500	mg/L	1	11/9/2006 7:33:02 PM
Nickel	ND		0.000484	0.00500	mg/L	1	11/9/2006 7:33:02 PM
Zinc	0.0187		0.00105	0.0100	mg/L	1	11/9/2006 7:33:02 PM
TOTAL METALS BY ICP/MS							Analyst: zau
Arsenic	ND		0.0280	1.00	µg/L	1	11/10/2006 9:08:00 P
Cadmium	ND		0.0190	0.100	µg/L	1	11/10/2006 9:08:00 P
Copper	1.28		0.0360	0.500	µg/L	1	11/10/2006 9:08:00 P
Lead	0.256		0.0350	0.100	µg/L	1	11/10/2006 9:08:00 P
NWTPH-DX							Analyst: jrp
Diesel	0.15	J	0.0610	0.238	mg/L	1	11/8/2006
Lube Oil	ND		0.0534	0.477	mg/L	1	11/8/2006
Surr: o-Terphenyl	96.3		0	50-150	%REC	1	11/8/2006
NWTPH-GX							Analyst: jrp
Gasoline	ND		28.5	100	µg/L	1	11/8/2006
Surr: BFB	123		0	50-150	%REC	1	11/8/2006
LOW LEVEL PAH BY GC/MS OARSIM (8270C)							Analyst: bda
Acenaphthene	ND		0.00569	0.0474	µg/L	1	11/10/2006 7:37:00 P
Acenaphthylene	ND		0.00854	0.0474	µg/L	1	11/10/2006 7:37:00 P
Anthracene	ND		0.00569	0.0474	µg/L	1	11/10/2006 7:37:00 P
Benz(a)anthracene	0.0095	J	0.00759	0.0474	µg/L	1	11/10/2006 7:37:00 P
Benzo(a)pyrene	ND		0.00569	0.0474	µg/L	1	11/10/2006 7:37:00 P
Benzo(b)fluoranthene	0.0095	J	0.00474	0.0474	µg/L	1	11/10/2006 7:37:00 P
Benzo(g,h,i)perylene	0.0095	J	0.00474	0.0474	µg/L	1	11/10/2006 7:37:00 P
Benzo(k)fluoranthene	ND		0.00759	0.0474	µg/L	1	11/10/2006 7:37:00 P
Chrysene	0.0095	J	0.00569	0.0474	µg/L	1	11/10/2006 7:37:00 P
Dibenz(a,h)anthracene	ND		0.00664	0.0474	µg/L	1	11/10/2006 7:37:00 P
Fluoranthene	0.0095	J	0.00474	0.0474	µg/L	1	11/10/2006 7:37:00 P
Fluorene	ND		0.00569	0.0474	µg/L	1	11/10/2006 7:37:00 P
Indeno(1,2,3-cd)pyrene	ND		0.00380	0.0474	µg/L	1	11/10/2006 7:37:00 P
Naphthalene	0.0569		0.0133	0.0474	µg/L	1	11/10/2006 7:37:00 P
Phenanthrene	ND		0.0104	0.0474	µg/L	1	11/10/2006 7:37:00 P
Pyrene	0.019	J	0.00569	0.0474	µg/L	1	11/10/2006 7:37:00 P
Surr: 2-Fluorobiphenyl	83.4		0	18.6-106	%REC	1	11/10/2006 7:37:00 P
Surr: Nitrobenzene-d5	85.3		0	17-130	%REC	1	11/10/2006 7:37:00 P
Surr: p-Terphenyl-d14	107		0	39.6-131	%REC	1	11/10/2006 7:37:00 P

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0611043
 Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID	MBLK-17140	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	11/8/2006	RunID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428706
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cadmium	ND	0.00100									
Chromium	ND	0.00500									
Nickel	ND	0.00500									
Zinc	ND	0.0100									

Sample ID	LCS-17140	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	11/8/2006	RunID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428707
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cadmium	0.0494	0.00100	0.05	0	98.8	91.8	110	0	0		
Chromium	0.2547	0.00500	0.25	0	102	93.9	113	0	0		
Nickel	0.2467	0.00500	0.25	0	98.7	93.4	111	0	0		
Zinc	0.5108	0.0100	0.5	0	102	92.3	111	0	0		

Sample ID	A0611045-12IMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	11/8/2006	RunID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428710
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cadmium	0.0497	0.00100	0.05	0	99.4	93.4	110	0	0		
Chromium	0.2556	0.00500	0.25	0	102	93.4	112	0	0		
Nickel	0.2469	0.00500	0.25	0	98.8	88.5	112	0	0		
Zinc	0.5147	0.0100	0.5	0.0111	101	93	110	0	0		

Sample ID	A0611045-12IMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	11/8/2006	RunID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428711
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cadmium	0.0498	0.00100	0.05	0	99.6	93.4	110	0.0497	0.201	20	
Chromium	0.252	0.00500	0.25	0	101	93.4	112	0.2556	1.42	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0611043
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID	A0611045-12IMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	11/8/2006	Run ID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428711
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.2473	0.00500	0.25	0	98.9	88.5	112	0.2469	0.162	20	
Zinc	0.5105	0.0100	0.5	0.0111	99.9	93	110	0.5147	0.819	20	

Sample ID	A0611045-12IDUP	SampType:	DUP	TestCode:	6010_W	Units:	mg/L	Prep Date:	11/8/2006	Run ID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428709
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.00100	0	0	0	0	0	0	0	20	
Chromium	ND	0.00500	0	0	0	0	0	0	0	20	
Nickel	ND	0.00500	0	0	0	0	0	0	0	20	
Zinc	ND	0.0100	0	0	0	0	0	0.0111	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428705
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.049	0.00100	0.05	0	98	90	110	0	0		
Chromium	0.254	0.00500	0.25	0	102	90	110	0	0		
Nickel	0.244	0.00500	0.25	0	97.6	90	110	0	0		
Zinc	0.5089	0.0100	0.5	0	102	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_061109C
Client ID:	ZZZZZ	Batch ID:	17140A	TestNo:	E6010A			Analysis Date:	11/9/2006	SeqNo:	428712
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0491	0.00100	0.05	0	98.2	90	110	0	0		
Chromium	0.2499	0.00500	0.25	0	100	90	110	0	0		
Nickel	0.2445	0.00500	0.25	0	97.8	90	110	0	0		
Zinc	0.5061	0.0100	0.5	0	101	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0611043
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID	CCV	SampType: CCV	TestCode: 6010_W	Units: mg/L	Prep Date:	Run ID: TJAIRIS_061109C					
Client ID: ZZZZZ	Batch ID: 17140A	TestNo: E6010A	Analysis Date: 11/9/2006	SeqNo: 428716							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0486	0.00100	0.05	0	97.2	90	110	0	0		
Chromium	0.2547	0.00500	0.25	0	102	90	110	0	0		
Nickel	0.2433	0.00500	0.25	0	97.3	90	110	0	0		
Zinc	0.5064	0.0100	0.5	0	101	90	110	0	0		

Sample ID	ICV	SampType: ICV	TestCode: 6010_W	Units: mg/L	Prep Date:	Run ID: TJAIRIS_061109C					
Client ID:	ZZZZZ	Batch ID: 17140A	TestNo: E6010A		Analysis Date: 11/9/2006	SeqNo: 428704					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0505	0.00100	0.05	0	101	90	110	0	0		
Chromium	0.2537	0.00500	0.25	0	101	90	110	0	0		
Nickel	0.2511	0.00500	0.25	0	100	90	110	0	0		
Zinc	0.5157	0.0100	0.5	0	103	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0611043
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	MBLK-17137	SampType:	MBLK	TestCode:	6020_W	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429140
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	1.00									
Copper	ND	0.500									
Lead	ND	0.100									

Sample ID	LCS-17137	SampType:	LCS	TestCode:	6020_W	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429141
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	49.78	1.00	50	0	99.6	80	120	0	0		
Copper	49.4	0.500	50	0	98.8	80	120	0	0		
Lead	47.8	0.100	50	0	95.6	80	120	0	0		

Sample ID	0611045-01IMS	SampType:	MS	TestCode:	6020_W	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429144
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	43.54	1.00	50	0.9011	85.3	70	130	0	0		
Copper	51.71	0.500	50	5.919	91.6	70	130	0	0		
Lead	53.59	0.100	50	2.32	103	70	130	0	0		

Sample ID	0611045-01IMSD	SampType:	MSD	TestCode:	6020_W	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429145
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	41.96	1.00	50	0.9011	82.1	70	130	43.54	3.70	20	
Copper	49.87	0.500	50	5.919	87.9	70	130	51.71	3.62	20	
Lead	51.97	0.100	50	2.32	99.3	70	130	53.59	3.07	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0611043
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	0611045-01DUP	SampType:	DUP	TestCode:	6020_W	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429143
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	0.845	1.00	0	0	0	0	0	0.9011	0	20	J
Copper	5.911	0.500	0	0	0	0	0	5.919	0.135	20	
Lead	2.308	0.100	0	0	0	0	0	2.32	0.519	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	µg/L	Prep Date:		Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429138
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	50.67	1.00	50	0	101	90	110	0	0		
Copper	26.13	0.500	25	0	105	90	110	0	0		
Lead	47.35	0.100	50	0	94.7	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	µg/L	Prep Date:		Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429150
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	50.81	1.00	50	0	102	90	110	0	0		
Copper	25.72	0.500	25	0	103	90	110	0	0		
Lead	47.39	0.100	50	0	94.8	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	µg/L	Prep Date:		Run ID:	ICPMS_061110A
Client ID:	ZZZZZ	Batch ID:	17137	TestNo:	SW6020			Analysis Date:	11/10/2006	SeqNo:	429160
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	50.86	1.00	50	0	102	90	110	0	0		
Copper	24.98	0.500	25	0	99.9	90	110	0	0		
Lead	48.01	0.100	50	0	96	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Page 5 of 10

AAC000057

CLIENT: Maul, Foster & Alongi
Work Order: 0611043
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	Run ID: ICPMS_061110A					
Client ID: ZZZZZ	Batch ID: 17137	TestNo: SW6020	Analysis Date: 11/10/2006	SeqNo: 429170							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.31	1.00	50	0	101	90	110	0	0		
Copper	24.99	0.500	25	0	100	90	110	0	0		
Lead	47.86	0.100	50	0	95.7	90	110	0	0		

Sample ID	ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	Run ID: ICPMS_061110A					
Client ID: ZZZZZ	Batch ID: 17137	TestNo: SW6020	Analysis Date: 11/10/2006	SeqNo: 429136							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.81	1.00	50	0	104	90	110	0	0		
Copper	26.52	0.500	25	0	106	90	110	0	0		
Lead	47.38	0.100	50	0	94.8	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0611043
 Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_W

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:	11/7/2006	Run ID:	GC-M_061108B	
Client ID:	ZZZZZ	Batch ID:	17131	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2006	SeqNo:	428122	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		0.0888	0.250									J
Lube Oil		ND	0.500									
Surr: o-Terphenyl		0.4186	0	0.5	0	83.7	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:	11/7/2006	Run ID:	GC-M_061108B	
Client ID:	ZZZZZ	Batch ID:	17131	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2006	SeqNo:	428123	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		2.08	0.250	2.5	0.0888	79.6	60.7	121	0	0		
Lube Oil		1.81	0.500	2.495	0	72.6	64	126	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:		Run ID:	GC-M_061108B	
Client ID:	ZZZZZ	Batch ID:	17131	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2006	SeqNo:	428124	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		16.74	0.250	15	0	112	85	115	0	0		
Lube Oil		7.44	0.500	7.5	0	99.2	85	115	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:		Run ID:	GC-M_061108B	
Client ID:	ZZZZZ	Batch ID:	17131	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2006	SeqNo:	428128	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		22.5	0.250	20	0	113	85	115	0	0		
Lube Oil		9.54	0.500	10	0	95.4	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0611043
 Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_W

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	GC-I_061108A	
Client ID:	ZZZZZ	Batch ID:	17149	TestNo:	NWTPH-Gx			Analysis Date:	11/8/2006	SeqNo:	427999	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		ND	100									
Surr: BFB		130	0	100	0	130	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	GC-I_061108A	
Client ID:	ZZZZZ	Batch ID:	17149	TestNo:	NWTPH-Gx			Analysis Date:	11/8/2006	SeqNo:	428000	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2611	100	2000	0	131	74.4	128	0	0		SC

Sample ID	0611028-03ADUP	SampType:	DUP	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	11/8/2006	Run ID:	GC-I_061108A			
Client ID:	ZZZZZ	Batch ID:	17149	TestNo:	NWTPH-Gx			Analysis Date:	11/8/2006	SeqNo:	428003			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		ND		100	0	0		0	0	0	35.33	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-I_061108A			
Client ID:	ZZZZZ	Batch ID:	17149	TestNo:	NWTPH-Gx			Analysis Date:	11/8/2006	SeqNo:	428001			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2745		100	2500	0		110	80	120	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-I_061108A	
Client ID:	ZZZZZ	Batch ID:	17149	TestNo:	NWTPH-Gx			Analysis Date:	11/8/2006	SeqNo:	428006	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2914	100	2600	0	112	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 8 of 10

CLIENT: Maul, Foster & Alongi
Work Order: 0611043
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_W

Sample ID	MB-17159	SampType:	MBLK	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:	11/9/2006	Run ID:	5975Q_061110A
Client ID:	ZZZZZ	Batch ID:	17159	TestNo:	8270SIM			Analysis Date:	11/10/2006	SeqNo:	429266
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.0500									
Acenaphthylene	ND	0.0500									
Anthracene	ND	0.0500									
Benz(a)anthracene	0.01	0.0500									J
Benzo(a)pyrene	ND	0.0500									
Benzo(b)fluoranthene	ND	0.0500									
Benzo(g,h,i)perylene	ND	0.0500									
Benzo(k)fluoranthene	ND	0.0500									
Chrysene	ND	0.0500									
Dibenz(a,h)anthracene	ND	0.0500									
Fluoranthene	ND	0.0500									
Fluorene	ND	0.0500									
Indeno(1,2,3-cd)pyrene	ND	0.0500									
Naphthalene	0.02	0.0500									J
Phenanthrene	ND	0.0500									
Pyrene	ND	0.0500									
Surr: 2-Fluorobiphenyl	42.44	1.00	100	0	42.4	18.6	106	0	0		
Surr: Nitrobenzene-d5	49.39	1.00	100	0	49.4	17	130	0	0		
Surr: p-Terphenyl-d14	91.5	1.00	100	0	91.5	39.6	131	0	0		

Sample ID	LCS-17159	SampType:	LCS	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:	11/9/2006	Run ID:	5975Q_061110A
Client ID:	ZZZZZ	Batch ID:	17159	TestNo:	8270SIM			Analysis Date:	11/10/2006	SeqNo:	429267
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	0.81	0.0500	2.5	0	32.4	35.1	100	0	0		S
Benzo(g,h,i)perylene	1.29	0.0500	2.5	0	51.6	20.8	120	0	0		
Chrysene	1.39	0.0500	2.5	0	55.6	39.1	119	0	0		
Naphthalene	0.71	0.0500	2.5	0.02	27.6	25.6	106	0	0		
Phenanthrene	1.06	0.0500	2.5	0	42.4	38.1	106	0	0		
Pyrene	1.33	0.0500	2.5	0	53.2	41.3	118	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0611043
 Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_W

Sample ID	LCSD-17159	SampType:	LCSD	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:	11/9/2006	Run ID:	5975Q_061110A
Client ID:	ZZZZZ	Batch ID:	17159	TestNo:	8270SIM			Analysis Date:	11/10/2006	SeqNo:	429268
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	1.11	0.0500	2.5	0	44.4	35.1	100	0.81	31.2	20	R
Benzo(g,h,i)perylene	1.64	0.0500	2.5	0	65.6	20.8	120	1.29	23.9	20	R
Chrysene	1.75	0.0500	2.5	0	70	39.1	119	1.39	22.9	20	R
Naphthalene	0.97	0.0500	2.5	0.02	38	25.6	106	0.71	31.0	20	R
Phenanthrene	1.49	0.0500	2.5	0	59.6	38.1	106	1.06	33.7	20	R
Pyrene	1.72	0.0500	2.5	0	68.8	41.3	118	1.33	25.6	20	R

Sample ID	CCV-17159	SampType:	CCV	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:		Run ID:	5975Q_061110A
Client ID:	ZZZZZ	Batch ID:	17159	TestNo:	8270SIM			Analysis Date:	11/10/2006	SeqNo:	429265
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	1.84	0.0500	2	0	92	70	130	0	0		
Acenaphthylene	1.78	0.0500	2	0	89	70	130	0	0		
Anthracene	1.81	0.0500	2	0	90.5	70	130	0	0		
Benz(a)anthracene	1.64	0.0500	2	0	82	70	130	0	0		
Benzo(a)pyrene	1.65	0.0500	2	0	82.5	70	130	0	0		
Benzo(b)fluoranthene	1.69	0.0500	2	0	84.5	70	130	0	0		
Benzo(g,h,i)perylene	1.7	0.0500	2	0	85	70	130	0	0		
Benzo(k)fluoranthene	1.78	0.0500	2	0	89	70	130	0	0		
Chrysene	1.71	0.0500	2	0	85.5	70	130	0	0		
Dibenz(a,h)anthracene	1.65	0.0500	2	0	82.5	70	130	0	0		
Fluoranthene	1.76	0.0500	2	0	88	70	130	0	0		
Fluorene	1.76	0.0500	2	0	88	70	130	0	0		
Indeno(1,2,3-cd)pyrene	1.69	0.0500	2	0	84.5	70	130	0	0		
Naphthalene	1.76	0.0500	2	0	88	70	130	0	0		
Phenanthrene	1.71	0.0500	2	0	85.5	70	130	0	0		
Pyrene	1.73	0.0500	2	0	86.5	70	130	0	0		

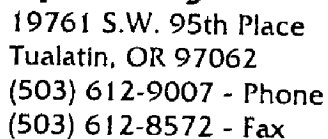
Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.



Page__ of__

Contact Person/Project Manager ANNA STJOHN
Company MAUL FOSTER & ALDRIDGE
Address 3181 SW MOODY STE 200
PORTLAND OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100.0101 Project Name _____
Invoice To _____ P.O. No. _____

Rush Analyses Must Be Scheduled With The Lab In Advance

AAC000064

**DATA QUALITY ASSURANCE/QUALITY CONTROL
MEMORANDUM**

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

ADVANCED AMERICAN CONSTRUCTION PROPERTIES, LLC

Stormwater Sampling—November 2006

0100.01.02

This report reviews the analytical results for a stormwater sample collected by the Maul Foster & Alongi, Inc. project team on the Advanced American Construction Properties, LLC site at 8444 NW St. Helens Road in Portland, Oregon. The sample was collected in November 2006.

Specialty Analytical (SA) in Tualatin, Oregon, performed the analysis. SA report number 0611043 was reviewed. The analyses performed are listed below.

Analysis	Reference
Diesel and lube oil	NWTPH-Dx
Gasoline-range organics	NWTPH-Gx
Total metals	USEPA 6010/6020
Polycyclic aromatic hydrocarbons	USEPA 8270 SIM
NOTES: NWTPH = Northwest Total Petroleum Hydrocarbons SIM = selected ion monitoring USEPA = U.S. Environmental Protection Agency	

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable parts of USEPA procedures (USEPA, 1994, 1999), and appropriate laboratory and method-specific guidelines (SA, 2006; USEPA, 1986). Data-validation procedures were modified, as appropriate, to accommodate quality-control requirements for methods not specifically addressed by the functional guidelines (i.e., hydrocarbon analyses).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Holding Times, Preservation, and Sample Storage

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Blanks

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. No target analytes were detected above the SA reporting limits (RLs).

Equipment Rinse Blanks

Rinse blanks were not submitted for this sample set.

Surrogate Recovery Results

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogates were extracted and analyzed at the required frequency. All surrogate percent recoveries were within acceptance limits.

Matrix Spike/Matrix Spike Duplicate Results

MS/MSD results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. All percent recoveries and relative percent differences (RPDs) were acceptable. All percent recoveries and RPDs were acceptable.

Laboratory Control Sample / Laboratory Control Sample Duplicate Results

A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) are spiked with target analytes to provide information on laboratory accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency. Except for minor exceedances, all LCS/LCSD analytes were within acceptance limits for percent recovery and RPDs. The reviewer took no action based on minor exceedances, as

associated sample results were non-detect and remaining batch quality assurance/quality control samples were within acceptance limits.

Laboratory Duplicate Results

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. All RPDs were within SA acceptance limits.

Field Duplicate Results

Field duplicate samples were not analyzed for this location.

Reporting Limits

SA used routine RLs to quantify the analytical results.

Data Package

The data packages were reviewed for transcription errors, omissions, or anomalies. None were found.

REFERENCES

- SA. 2006. Quality assurance manual. Specialty Analytical, Tualatin, Oregon.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).
- USEPA. 1994. USEPA contract laboratory program, national functional guidelines for inorganics data review. EPA 540/R-94/013. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. February.
- USEPA. 1999. USEPA contract laboratory program, national functional guidelines for organics data review. EPA540/R-99/008. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. October.

FIELD SAMPLING DATA SHEET

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	RGA/JJP				
Project Name	Advanced American Construction	Sampling Date	11/7/2006				
Sampling Event	4th Qtr Stormwater 2006	Sample Name	AF1-110706				
Sub Area		Sample Depth	12				
FSDS QA:	BTF 12/12/2006	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness) DTP-DTW	(Water Column) DTB-DTW	(Gallons/ft x Water Column) Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	12:48	--	--	7.21	16.0	185	--	--	

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	1:00:00 PM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature *Bruce J. Zull* 12/21/06

AAC000071



ENVIRONMENTAL & ENGINEERING CONSULTANTS

3121 SW Moody Avenue, Suite 200 | Portland, Oregon 97239 | Phone 971.544.2139 | Fax 971.544.2140 | www.MFAinc.org

May 25, 2007

Project No. 0100.01.02

Mr. Mark Pugh

Oregon Department of Environmental Quality--Northwest Region

2020 SW Fourth Avenue, Suite 400

Portland, Oregon 97201

Re: May 2007 Stormwater Sampling Event
Advanced American Construction Properties, LLC
8444 NW St. Helens Road
Portland, Oregon

Dear Mark:

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster & Alongi, Inc. is submitting the results of the May 2007 stormwater sampling event at the above-referenced site. Stormwater sampling is required as a condition of the November 16, 2004 (recorded November 24, 2004), Prospective Purchaser Agreement (PPA) between AACP and the Oregon Department of Environmental Quality (DEQ). Pursuant to Sections 2B(1) and (2) of the PPA, AACP has implemented source control measures and best management practices (BMPs) outlined in the October 2004 Source Control Plan, including installation of a stormwater management system during site development, and, once constructed, sampling of the system for one year for analysis of metals, polycyclic aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH), as required by the PPA.

The attached figure shows the layout of the stormwater system. DEQ requested that a sample be collected from the outfall to the Willamette River. Because the outfall was submerged, a sample was collected from the storm line immediately downstream of the oil/water separator (AF-1); this location was the closest accessible location to the outfall.

Samples have been collected in May and November 2006 and May 2007. MFA attempted to collect samples consistent with the requirements in the 2005 U.S. Environmental Protection Agency/DEQ Joint Source Control guidance. The guidance recommends at least two sampling events be conducted during a "storm" event. The storm event is defined as follows:

- Antecedent dry period in previous 24 hours (i.e., <.1" precipitation)

- Minimum predicted rainfall of >0.2" during the storm event
- A duration of at least 3 hours

The May 26, 2006 sample was collected during a storm event at 10:35 a.m. After more than 37 hours of less than 0.1 inches of recorded precipitation,¹ rain began to fall at 5 a.m. Between 5 a.m. and 10 a.m., 0.07 inches of rainfall was recorded at the City of Portland HYDRA Rainfall gage 160 at 6543 N. Burlington Ave. The November 7, 2006 sample was collected during a storm event at 12:48 p.m. The rain event began on November 2, 2006 and continued through November 8, 2006. Between 2 a.m. and 12 p.m. on November 2nd, 1.03 inches of rainfall was recorded at the City of Portland HYDRA Rainfall gage 160. The May 2, 2007 sample was collected during a storm event at 12:42 p.m. After more than 72 hours of less than 0.1 inches of recorded precipitation, rain began to fall at 10:00 p.m. on May 1, 2007. Between 10:00 p.m. on May 1st and 12:42 p.m. on May 2nd, 0.29 inches of rainfall was recorded at the City of Portland HYDRA Rainfall gage 160. In all three cases, the amount of precipitation was enough to create flow at the outfall.

The stormwater samples were analyzed for metals by U.S. Environmental Protection Agency (USEPA) Method 6010/6020; for PAHs by USEPA Method 8270C-SIM; and for TPH by NWTPH-Gx and -Dx for gasoline- and diesel-range organics, respectively (see Tables 1 through 3 and the attached laboratory analytical report). A quality assurance/quality control review of the data is attached. The data are acceptable for the intended use, with the appropriate data qualifiers assigned. The results were screened against the screening level values (SLVs) for surface water in the 2005 DEQ/USEPA Joint Source Control Strategy guidance. Detections of copper (5.74 µg/L), zinc (51.1 µg/L), and benzo(a)anthracene (0.028 J µg/L) in May 2007 were slightly above the ecological SLVs during the May 2007 sampling event. All other detections were below the SLVs. Some of the method reporting limits were greater than the SLVs, but are the lowest verifiable and defensible levels achievable in the laboratory.

Based on the results of the May and November 2006 sampling, DEQ noted, in a January 2, 2007, electronic mail, that it might consider closing the site after one more event. AACP has implemented the source control measures and BMPs outlined in the October 2004 Source Control Plan and respectfully requests a no further action determination for the site from the DEQ.

¹ Rainfall measurements were collected from the City of Portland HYDRA Rainfall Network at rain gauge station 160 at 6543 N. Burlington Ave. (<http://or.water.usgs.gov/non-usgs/bes/>).


Mr. Mark Pugh
May 25, 2007
Page 3

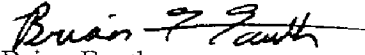
Project No. 0100.01.02

Please call Dee Burch at AACP (503-650-8207) or us with any questions.

Sincerely,

Maul Foster & Alongi, Inc.


Anna St. John, RG
Project Manager


Brian Fauth
Staff Environmental Scientist

Attachments: Tables
Figure
Laboratory Analytical Report
Field Sampling Data Sheets
QA/QC Memorandum

cc: Dee Burch, AACP

TABLES

Table Notes
Advanced American Construction Properties, LLC
Portland, Oregon

BOLD indicates that result (detection or MRL) exceeds human health screening level value.
Metals and polycyclic hydrocarbons are reported to MDL.
DEQ = Oregon Department of Environmental Quality.
feet bgs = feet below ground surface.
J = estimated; results between the MDL and MRL were flagged.
JSCS = Joint Source Control Strategy (Portland Harbor—Sept. 2005)
mg/L = milligrams per liter.
MDL = method detection limit.
MRL = method reporting limit.
µg/L = micrograms per liter.
NV = no value.
SLV = screening level value
U = analysis was conducted, but analyte was not detected above reported sample quantitation limit.
UJ = analyte was not detected above the MDL; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the
USEPA = U.S. Environmental Protection Agency.

Table 1
Total Metals in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Sample	Lab Sample	Date Collected	Depth (feet bgs)	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological					3.1	0.094	NV	2.7	0.54	16	33
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health					0.014	5	100	1,300	15	460	2,600
AF1	AFI-052606	0605148-01	5/26/2006	12	0.33 J	0.019 UJ	0.738 UJ	1.46	0.181	0.484 UJ	18.2
	AFI-110706	0611043-01A	11/7/2006	12	0.028 UJ	0.019 UJ	0.738 UJ	1.28	0.256	0.484 UJ	18.7
	AFI-050207	0705023-01A	5/2/2007	12	0.18 J	0.019 U	0.74 U	5.74	0.035 U	0.50 J	51.1

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				520	NV	0.73	0.027	0.014	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.2	0.2	0.0018	0.0018	0.0018
AF1	0605148-01	5/26/2006	12	0.033 J	0.00980 UJ	0.033 J	0.011 J	0.00654 UJ	0.00545 UJ
	0611043-01A	11/7/2006	12	0.00569 UJ	0.00854 UJ	0.00569 UJ	0.0095 J	0.00569 UJ	0.0095 J
	0705023-01A	5/2/2007	12	0.0057 U	0.00855 U	0.0095 J	0.028 J	0.0095 J	0.0095 J

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Benzo(ghi)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				NV	NV	NV	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.0018	0.0018	0.0018	0.2
AF1	0605148-01	5/26/2006	12	0.011 J	0.00871 UJ	0.011 J	0.00763 UJ	0.044 J
	0611043-01A	11/7/2006	12	0.0095 J	0.00759 UJ	0.0095 J	0.00664 UJ	0.0095 J
	0705023-01A	5/2/2007	12	0.0095 J	0.0095 J	0.0095 J	0.00665 U	0.38 J

Table 2
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				3.9	NV	12	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.0018	0.2	0.2	0.2
AF1	0605148-01	5/26/2006	12	0.0654	0.00436 UJ	0.0654	0.153	0.033 J
	0611043-01A	11/7/2006	12	0.00569 UJ	0.0038 UJ	0.0569	0.0104 UJ	0.019 J
	0705023-01A	5/2/2007	12	0.0095 J	0.0095 J	0.0760 UJ	0.019 J	0.038 J

Table 3
Total Petroleum Hydrocarbons in Stormwater (mg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample	Date Collected	Depth (feet bgs)	Gasoline	Diesel	Lube-Oil-Range Hydrocarbons
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				NV	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				NV	NV	NV
AF1	0605148-01	5/26/2006	12	0.10 U	0.543	0.701
	0611043-01A	11/7/2006	12	0.238 U	0.10 U	0.477 U
	0705023-01A	5/2/2007	12	0.449	0.10 U	0.5 U

FIGURE

GROUP

MACKENZIE

Civil Engineering
Structural Engineering
Transportation Planning
Portland, OR
360.224.9360

Architecture
Interior Design
Land Use Planning
Tacoma, WA
253.477.0255

Seattle, WA
206.448.1499

Client

AAC.LOGO.TIF

Project
NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.

General Contractor
PELLO MCCORMACK PACIFIC
7100 SW Sandburg Rd
Portland, Oregon 97223
Phone: (503) 624-2090
Fax: (503) 639-4134

Landscape Architect
FREDMAN ENVIRONMENTAL
DESIGN
313 SW Alder
Azzonline B
Portland, Oregon 97205
Phone: (503) 222-1639
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REVISIONS:

NO.	REVISIONS	REVISION DATE	CLOSING DATE
1	X	08.16.05	
2	X	IN PROGRESS	

SHEET TITLE:
UTILITY PLAN

DRAWN BY: R.H.H

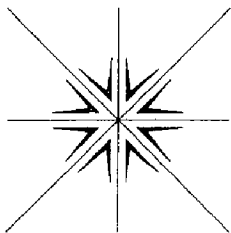
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SHEET

C2.3

JOB NO. 2040378.00

LABORATORY ANALYTICAL REPORT



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

May 23, 2007

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX: (971) 544-2140

RE: Advanced American / 0100.01.01

Dear Anna St. John:

Order No.: 0705023

Specialty Analytical received 1 sample on 5/3/2007 for the analyses presented in the following report.

REVISED REPORT VERSION 2 . Please see case narrative for information on revision.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 23-May-07

CLIENT: Maul, Foster & Alongi
Project: Advanced American / 0100.01.01
Lab Order: 0705023

CASE NARRATIVE

Report revision 2.

The associated method blank showed a detection of Naphthalene above the reporting limit for PAHs by EPA 8270 SIM. The reported sample concentration may be biased high. No volume was available for re-extraction and re-analysis.

The original report had an incorrect analysis date for metals by EPA 6020. This report revision contains the correct analysis date.

This report revision includes PAH and metals data evaluated and reported to the MDL for Specialty Analytical sample 0704023-01 (Client ID AFI-050207).

Specialty Analytical

Date: 23-May-07

CLIENT: Maul, Foster & Alongi
Lab Order: 0705023
Project: Advanced American/0100.01.01
Lab ID: 0705023-01

Client Sample ID: AFI-050207
Collection Date: 5/2/2007 12:40:00 PM
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Limit	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
		E6010A					Analyst: zau
Chromium	ND		0.000738	0.00500	mg/L	1	5/4/2007 7:06:21 PM
Nickel	0.00050	J	0.000484	0.00500	mg/L	1	5/4/2007 7:06:21 PM
Zinc	0.0511		0.00105	0.0100	mg/L	1	5/4/2007 7:06:21 PM
TOTAL METALS BY ICP/MS							
		SW6020					Analyst: zau
Arsenic	0.18	J	0.0280	1.00	µg/L	1	5/4/2007 3:36:00 PM
Cadmium	ND		0.0190	0.100	µg/L	1	5/4/2007 3:36:00 PM
Copper	5.74		0.0360	0.500	µg/L	1	5/4/2007 3:36:00 PM
Lead	ND		0.0350	0.100	µg/L	1	5/4/2007 3:36:00 PM
NWTPH-DX							
		NWTPH-DX					Analyst: jrj
Diesel	0.449	A1	0.0639	0.250	mg/L	1	5/7/2007
Lube Oil	0.29	J	0.0559	0.500	mg/L	1	5/7/2007
Surr: o-Terphenyl	75.3		0	50-150	%REC	1	5/7/2007
NWTPH-GX							
		NWTPH-GX					Analyst: jrj
Gasoline	32	J	28.5	100	µg/L	1	5/4/2007
Surr: 4-Bromofluorobenzene	92.6		0	50-150	%REC	1	5/4/2007
LOW LEVEL PAH BY GC/MS OARSIM (8270C)							
		8270SIM					Analyst: bda
Acenaphthene	ND		0.00570	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Acenaphthylene	ND		0.00855	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Anthracene	0.0095	J	0.00570	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Benz(a)anthracene	0.028	J	0.00760	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Benzo(a)pyrene	0.0095	J	0.00570	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Benzo(b)fluoranthene	0.0095	J	0.00475	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Benzo(g,h,i)perylene	0.0095	J	0.00475	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Benzo(k)fluoranthene	0.0095	J	0.00760	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Chrysene	0.0095	J	0.00570	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Dibenz(a,h)anthracene	ND		0.00665	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Fluoranthene	0.038	J	0.00475	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Fluorene	0.0095	J	0.00570	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Indeno(1,2,3-cd)pyrene	0.0095	J	0.00380	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Naphthalene	0.0760	B	0.0133	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Phenanthrene	0.019	J	0.0104	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Pyrene	0.038	J	0.00570	0.0475	µg/L	1	5/4/2007 2:34:00 PM
Surr: 2-Fluorobiphenyl	37.9		0	18.6-106	%REC	1	5/4/2007 2:34:00 PM
Surr: Nitrobenzene-d5	69.0		0	17-130	%REC	1	5/4/2007 2:34:00 PM
Surr: p-Terphenyl-d14	87.3		0	39.6-131	%REC	1	5/4/2007 2:34:00 PM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0705023
 Project: Advanced American/0100.01.01

ANALYTICAL QCSUMMARY REPORT

TestCode: 6010_W

Sample ID	MBLK-18452	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	TJAIRIS_070504G		
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464079		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	ND	0.00500												
Nickel	ND	0.00500												
Zinc	ND	0.0100												

Sample ID	LCS-18452	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	TJAIRIS_070504G		
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464080		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.244	0.00500	0.25	0	97.6	93.9	113	0	0					
Nickel	0.2512	0.00500	0.25	0	100	93.4	111	0	0					
Zinc	0.4921	0.0100	0.5	0	98.4	92.3	111	0	0					

Sample ID	A0705027-01BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	TJAIRIS_070504G		
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464083		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.2464	0.00500	0.25	0.0032	97.3	93.4	112	0	0					
Nickel	0.2543	0.00500	0.25	0	102	88.5	112	0	0					
Zinc	0.5147	0.0100	0.5	0.0106	101	93	110	0	0					

Sample ID	A0705027-01BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	TJAIRIS_070504G		
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464084		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	0.2503	0.00500	0.25	0.0032	98.8	93.4	112	0.2464	1.57	20				
Nickel	0.256	0.00500	0.25	0	102	88.5	112	0.2543	0.666	20				
Zinc	0.5186	0.0100	0.5	0.0106	102	93	110	0.5147	0.755	20				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0705023
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID	A0705027-01BDUP	SampType:	DUP	TestCode:	6010_W	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	TJAIRIS_070504G
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464082
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.0031	0.00500	0	0	0	0	0	0.0032	0	20	J
Nickel	ND	0.00500	0	0	0	0	0	0	0	20	
Zinc	0.0104	0.0100	0	0	0	0	0	0.0106	1.90	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_070504G
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464078
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2464	0.00500	0.25	0	98.6	90	110	0	0		
Nickel	0.2586	0.00500	0.25	0	103	90	110	0	0		
Zinc	0.5072	0.0100	0.5	0	101	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_070504G
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464086
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2453	0.00500	0.25	0	98.1	90	110	0	0		
Nickel	0.253	0.00500	0.25	0	101	90	110	0	0		
Zinc	0.504	0.0100	0.5	0	101	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_W	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_070504G
Client ID:	ZZZZZ	Batch ID:	18452	TestNo:	E6010A			Analysis Date:	5/4/2007	SeqNo:	464090
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2463	0.00500	0.25	0	98.5	90	110	0	0		
Nickel	0.2466	0.00500	0.25	0	98.6	90	110	0	0		
Zinc	0.4978	0.0100	0.5	0	99.6	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
WorkOrder: 0705023
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID	CCV	SampType: CCV	TestCode: 6010_W	Units: mg/L	Prep Date:	Run ID: TJAIRIS_070504G					
Client ID:	ZZZZZ	Batch ID: 18452	TestNo: E6010A		Analysis Date: 5/4/2007	SeqNo: 464093					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2542	0.00500	0.25	0	102	90	110	0	0		
Nickel	0.2552	0.00500	0.25	0	102	90	110	0	0		
Zinc	0.5099	0.0100	0.5	0	102	90	110	0	0		

Sample ID	ICV	SampType: ICV	TestCode: 6010_W	Units: mg/L	Prep Date:	Run ID: TJAIRIS_070504G					
Client ID:	ZZZZZ	Batch ID: 18452	TestNo: E6010A		Analysis Date: 5/4/2007	SeqNo: 464077					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.2452	0.00500	0.25	0	98.1	90	110	0	0		
Nickel	0.249	0.00500	0.25	0	99.6	90	110	0	0		
Zinc	0.4968	0.0100	0.5	0	99.4	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0705023
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	MBLK-18454	SampType:	MBLK	TestCode:	6020_W	Units:	µg/L	Prep Date:	5/3/2007	Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463894
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	1.00									
Cadmium	ND	0.100									
Copper	ND	0.500									
Lead	ND	0.100									

Sample ID	LCS-185454	SampType:	LCS	TestCode:	6020_W	Units:	µg/L	Prep Date:	5/3/2007	Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463895
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	48.95	1.00	50	0	97.9	80	120	0	0		
Cadmium	50.21	0.100	50	0	100	80	120	0	0		
Copper	49.37	0.500	50	0	98.7	80	120	0	0		
Lead	47.96	0.100	50	0	95.9	80	120	0	0		

Sample ID	A0705030-01CMS	SampType:	MS	TestCode:	6020_W	Units:	µg/L	Prep Date:	5/3/2007	Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463898
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	60.07	1.00	50	8.68	103	70	130	0	0		
Cadmium	49.16	0.100	50	0.03	98.3	70	130	0	0		
Copper	62.47	0.500	50	12.05	101	70	130	0	0		
Lead	49.14	0.100	50	0	98.3	70	130	0	0		

Sample ID	A0705030-01CMSD	SampType:	MSD	TestCode:	6020_W	Units:	µg/L	Prep Date:	5/3/2007	Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463899
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	58.91	1.00	50	8.68	100	70	130	60.07	1.95	20	
Cadmium	50.11	0.100	50	0.03	100	70	130	49.16	1.91	20	
Copper	62.43	0.500	50	12.05	101	70	130	62.47	0.0641	20	
Lead	49.74	0.100	50	0	99.5	70	130	49.14	1.21	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

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 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0705023
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	A0705030-01CDUP	SampType:	DUP	TestCode:	6020_W	Units:	µg/L	Prep Date:	5/3/2007	Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463897
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8.3	1.00	0	0	0	0	0	8.68	4.48	20	
Cadmium	ND	0.100	0	0	0	0	0	0.03	0	20	
Copper	12.2	0.500	0	0	0	0	0	12.05	1.24	20	
Lead	ND	0.100	0	0	0	0	0	0	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	µg/L	Prep Date:		Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463893
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.2	1.00	50	0	102	90	110	0	0		
Cadmium	52.14	0.100	50	0	104	90	110	0	0		
Copper	52.12	0.500	50	0	104	90	110	0	0		
Lead	50.48	0.100	50	0	101	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	µg/L	Prep Date:		Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463900
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.92	1.00	50	0	104	90	110	0	0		
Cadmium	51.98	0.100	50	0	104	90	110	0	0		
Copper	52.68	0.500	50	0	105	90	110	0	0		
Lead	49.61	0.100	50	0	99.2	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	µg/L	Prep Date:		Run ID:	ICPMS_070504C
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/4/2007	SeqNo:	463907
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.18	1.00	50	0	104	90	110	0	0		
Cadmium	51.47	0.100	50	0	103	90	110	0	0		
Copper	52.26	0.500	50	0	105	90	110	0	0		
Lead	49.33	0.100	50	0	98.7	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0705023
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_W

Sample ID	CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	Run ID: ICPMS_070504C					
Client ID: ZZZZZ	Batch ID: 18454	TestNo: SW6020	Analysis Date: 5/10/2007	SeqNo: 465016							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	48.31	0.100	50	0	96.6	90	110	0	0		
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Sample ID	CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	Run ID: ICPMS_070504C					
Client ID: ZZZZZ	Batch ID: 18454	TestNo: SW6020	Analysis Date: 5/10/2007	SeqNo: 465021							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	49.87	0.100	50	0	99.7	90	110	0	0		
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Sample ID	CCV	SampType:	CCV	TestCode:	6020_W	Units:	µg/L	Prep Date:		Run ID:	ICPMS_070504C		
Client ID:	ZZZZZ	Batch ID:	18454	TestNo:	SW6020			Analysis Date:	5/10/2007	SeqNo:	465024		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	49.08	0.100	50	0	98.2	90	110	0	0		
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Sample ID	ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	Run ID: ICPMS_070504C					
Client ID:	ZZZZZ	Batch ID: 18454	TestNo: SW6020		Analysis Date: 5/4/2007	SeqNo: 463892					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	51.51	1.00	50	0	103	90	110	0	0		
Cadmium	52.29	0.100	50	0	105	90	110	0	0		
Copper	53.11	0.500	50	0	106	90	110	0	0		
Lead	50.31	0.100	50	0	101	90	110	0	0		

Sample ID	ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	Run ID: ICPMS_070504C					
Client ID:	ZZZZZ	Batch ID: 18454	TestNo: SW6020		Analysis Date: 5/10/2007	SeqNo: 465015					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	48.98	0.100	50	0	98	90	110	0	0		
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Qualifiers: ND - Not Detected at the Reporting Limit
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CLIENT: Maul, Foster & Alongi
WorkOrder: 0705023
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_W

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	GC-M_070507B	
Client ID:	ZZZZZ	Batch ID:	18444	TestNo:	NWTPH-Dx			Analysis Date:	5/7/2007	SeqNo:	464228	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND	0.250									
Lube Oil		ND	0.500									
Surr:o-Terphenyl		0.3186	0	0.5	0	63.7	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	GC-M_070507B	
Client ID:	ZZZZZ	Batch ID:	18444	TestNo:	NWTPH-Dx			Analysis Date:	5/7/2007	SeqNo:	464229	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		2.154	0.250	2.505	0	86	60.7	121	0	0		
Lube Oil		1.93	0.500	2.495	0	77.4	64	126	0	0		

Sample ID	LCSD	SampType:	LCSD	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:	5/3/2007	Run ID:	GC-M_070507B	
Client ID:	ZZZZZ	Batch ID:	18444	TestNo:	NWTPH-Dx			Analysis Date:	5/7/2007	SeqNo:	464230	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		2.306	0.250	2.505	0	92.1	60.7	121	2.154	6.85	20	
Lube Oil		2.016	0.500	2.495	0	80.8	64	126	1.93	4.35	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:		Run ID:	GC-M_070507B	
Client ID:	ZZZZZ	Batch ID:	18444	TestNo:	NWTPH-Dx			Analysis Date:	5/7/2007	SeqNo:	464231	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		18.71	0.250	20.04	0	93.4	85	115	0	0		
Lube Oil		9.74	0.500	9.955	0	97.8	85	115	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:		Run ID:	GC-M_070507B	
Client ID:	ZZZZZ	Batch ID:	18444	TestNo:	NWTPH-Dx			Analysis Date:	5/7/2007	SeqNo:	464234	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		19.25	0.250	20.04	0	96.1	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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CLIENT: Maul, Foster & Alongi
WorkOrder: 0705023
Project: Advanced American / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_W

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_	Units:	mg/L	Prep Date:		Run ID:	GC-M_070507B	
Client ID:	ZZZZZ	Batch ID:	18444	TestNo:	NWTPH-Dx			AnalysisDate:	5/7/2007	SeqNo:	464234	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil		9.558	0.500	9.955	0	96	85	115	0	0		

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Page 8 of 12

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CLIENT: Maul, Foster & Alongi
WorkOrder: 0705023
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_W

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	5/4/2007	Run ID:	GC-H_070504B	
Client ID:	ZZZZZ	Batch ID:	18461	TestNo:	NWTPH-Gx			Analysis Date:	5/4/2007	SeqNo:	463868	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		41.36	100									J
Surr:4-Bromofluorobenzene		94.67	0	100	0	94.7	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	5/4/2007	Run ID:	GC-H_070504B			
Client ID:	ZZZZZ	Batch ID:	18461	TestNo:	NWTPH-Gx			Analysis Date:	5/4/2007	SeqNo:	463869			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2217		100	2000	41.36		109	74.4	128	0	0		

Sample ID	0705023-01DDUP	SampType:	DUP	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	5/4/2007	Run ID:	GC-H_070504B	
Client ID:	AFI-050207	Batch ID:	18461	TestNo:	NWTPH-Gx			Analysis Date:	5/4/2007	SeqNo:	463873	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		ND	100	0	0	0	0	0	31.54	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-H_070504B			
Client ID:	ZZZZZ	Batch ID:	18461	TestNo:	NWTPH-Gx			Analysis Date:	5/4/2007	SeqNo:	463870			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2411		100	2500	0		96.4	80	120	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-H_070504B			
Client ID:	ZZZZZ	Batch ID:	18461	TestNo:	NWTPH-Gx			Analysis Date:	5/4/2007	SeqNo:	463875			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2590		100	2700	0		95.9	80	120	0	0		

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B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0705023
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_W

SampleID	MB-18446	SampType: MBLK	TestCode: PAHLL_W	Units: µg/L	Prep Date: 5/3/2007	Run ID: 5975Q_070504A					
Client ID:	ZZZZZ	Batch ID: 18446	TestNo: 8270SIM		Analysis Date: 5/4/2007	SeqNo: 463997					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.0500									
Acenaphthylene	ND	0.0500									
Anthracene	ND	0.0500									
Benz(a)anthracene	0.01	0.0500									J
Benzo(a)pyrene	ND	0.0500									
Benzo(b)fluoranthene	ND	0.0500									
Benzo(g,h,i)perylene	ND	0.0500									
Benzo(k)fluoranthene	ND	0.0500									
Chrysene	ND	0.0500									
Dibenz(a,h)anthracene	ND	0.0500									
Fluoranthene	0.01	0.0500									J
Fluorene	ND	0.0500									
Indeno(1,2,3-cd)pyrene	ND	0.0500									
Naphthalene	0.05	0.0500									
Phenanthrene	ND	0.0500									
Pyrene	0.01	0.0500									J
Surr: 2-Fluorobiphenyl	50.76	1.00	100	0	50.8	18.6	106	0	0		
Surr: Nitrobenzene-d5	75.15	1.00	100	0	75.2	17	130	0	0		
Surr: p-Terphenyl-d14	100.9	1.00	100	0	101	39.6	131	0	0		

Sample ID	LCS-18446	SampType: LCS	TestCode: PAHLL_W	Units: µg/L	Prep Date: 5/3/2007	Run ID: 5975Q_070504A					
Client ID:	ZZZZZ	Batch ID: 18446	TestNo: 8270SIM		Analysis Date: 5/4/2007	SeqNo: 463998					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	2.52	0.0500	5	0	50.4	35.1	100	0	0		
Benzo(g,h,i)perylene	2.74	0.0500	5	0	54.8	20.8	120	0	0		
Chrysene	3	0.0500	5	0	60	39.1	119	0	0		
Naphthalene	2.37	0.0500	5	0.05	46.4	25.6	106	0	0		
Phenanthrene	2.75	0.0500	5	0	55	38.1	106	0	0		
Pyrene	3.19	0.0500	5	0.01	63.6	41.3	118	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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CLIENT: Maul, Foster & Alongi
Work Order: 0705023
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_W

Sample ID	LCSD-18446	SampType: LCSD	TestCode: PAHLL_W	Units: µg/L	Prep Date: 5/3/2007				Run ID: 5975Q_070504A		
Client ID:	ZZZZZ	Batch ID: 18446	TestNo: 8270SIM		Analysis Date: 5/4/2007				SeqNo: 463999		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	2.23	0.0500	5	0	44.6	35.1	100	2.52	12.2	20	
Benzo(g,h,i)perylene	2.47	0.0500	5	0	49.4	20.8	120	2.74	10.4	20	
Chrysene	2.67	0.0500	5	0	53.4	39.1	119	3	11.6	20	
Naphthalene	2.06	0.0500	5	0.05	40.2	25.6	106	2.37	14.0	20	
Phenanthrene	2.53	0.0500	5	0	50.6	38.1	106	2.75	8.33	20	
Pyrene	2.89	0.0500	5	0.01	57.6	41.3	118	3.19	9.87	20	

Sample ID	CCV-18446	SampType: CCV	TestCode: PAHLL_W	Units: µg/L	Prep Date:				Run ID: 5975Q_070504A		
Client ID:	ZZZZZ	Batch ID: 18446	TestNo: 8270SIM	Analysis Date: 5/4/2007				SeqNo: 463996			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	1.88	0.0500	2	0	94	70	130	0	0		
Acenaphthylene	1.91	0.0500	2	0	95.5	70	130	0	0		
Anthracene	1.77	0.0500	2	0	88.5	70	130	0	0		
Benz(a)anthracene	1.71	0.0500	2	0	85.5	70	130	0	0		
Benzo(a)pyrene	1.6	0.0500	2	0	80	70	130	0	0		
Benzo(b)fluoranthene	1.56	0.0500	2	0	78	70	130	0	0		
Benzo(g,h,i)perylene	1.72	0.0500	2	0	86	70	130	0	0		
Benzo(k)fluoranthene	1.62	0.0500	2	0	81	70	130	0	0		
Chrysene	1.79	0.0500	2	0	89.5	70	130	0	0		
Dibenz(a,h)anthracene	1.64	0.0500	2	0	82	70	130	0	0		
Fluoranthene	1.77	0.0500	2	0	88.5	70	130	0	0		
Fluorene	1.77	0.0500	2	0	88.5	70	130	0	0		
Indeno(1,2,3-cd)pyrene	1.67	0.0500	2	0	83.5	70	130	0	0		
Naphthalene	1.91	0.0500	2	0	95.5	70	130	0	0		
Phenanthrene	1.81	0.0500	2	0	90.5	70	130	0	0		
Pyrene	1.98	0.0500	2	0	99	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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CLIENT: Maul, Foster & Alongi
WorkOrder: 0705023
Project: Advanced American/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_W

Sample ID	CCV-18446	SampType:	CCV	TestCode:	PAHLL_W	Units:	µg/L	Prep Date:		Run ID:	5975Q_070504A
Client ID:	ZZZZZ	Batch ID:	18446	TestNo:	8270SIM			Analysis Date:	5/7/2007	SeqNo:	464114
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	0.91	0.0500	1	0	91	70	130	0	0		
Acenaphthylene	0.96	0.0500	1	0	96	70	130	0	0		
Anthracene	0.92	0.0500	1	0	92	70	130	0	0		
Benz(a)anthracene	0.92	0.0500	1	0	92	70	130	0	0		
Benzo(a)pyrene	0.78	0.0500	1	0	78	70	130	0	0		
Benzo(b)fluoranthene	0.8	0.0500	1	0	80	70	130	0	0		
Benzo(g,h,i)perylene	0.85	0.0500	1	0	85	70	130	0	0		
Benzo(k)fluoranthene	0.83	0.0500	1	0	83	70	130	0	0		
Chrysene	0.93	0.0500	1	0	93	70	130	0	0		
Dibenz(a,h)anthracene	0.82	0.0500	1	0	82	70	130	0	0		
Fluoranthene	0.88	0.0500	1	0	88	70	130	0	0		
Fluorene	0.94	0.0500	1	0	94	70	130	0	0		
Indeno(1,2,3-cd)pyrene	0.82	0.0500	1	0	82	70	130	0	0		
Naphthalene	0.91	0.0500	1	0	91	70	130	0	0		
Phenanthrene	0.9	0.0500	1	0	90	70	130	0	0		
Pyrene	0.98	0.0500	1	0	98	70	130	0	0		

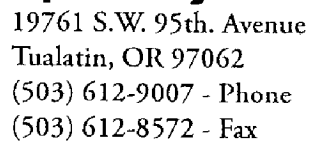
Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- M1 Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.



Page 1 of 1

Contact Person/Project Manager ANNA ST JOHN
Company MFA
Address 3121 SW MOODY AVE STE 200
PORTLAND, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100.01.01 Project Name 0
Invoice To _____ P.O. No. _____

Signature S. Mauldin
Printed SCOTT MAULDIN

Signature _____
Printed _____

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

AAC000101

FIELD SAMPLING DATA SHEETS

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	SM/RA				
Project Name	Advanced American Construction	Sampling Date	5/2/2007				
Sampling Event	Second Quarter Stormwater	Sample Name	AF1-050207				
Sub Area		Sample Depth	12				
FSDS QA:	SM 5/02/2007	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	12:42	--	--	7.52	11.6	53.2	--	--	6.12

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	12:40:00 PM	VOA-Glass	3	No
			Amber Glass	3	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	7	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000103

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	RGA				
Project Name	Advanced American Construction	Sampling Date	5/26/2006				
Sampling Event	2nd Qtr Stormwater	Sample Name	AF1-052606				
Sub Area		Sample Depth	12				
FSDS QA:		Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	10:35	--	--	7.56	13.3	83.5	--	--	5.21

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	10:35:00 AM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000104

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	RGA/JJP				
Project Name	Advanced American Construction	Sampling Date	11/7/2006				
Sampling Event	4th Qtr Stormwater 2006	Sample Name	AF1-110706				
Sub Area		Sample Depth	12				
FSDS QA:	BTF 12/12/2006	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	12:48	--	--	7.21	16.0	185	--	--	

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	1:00:00 PM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000105

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler					
Project Name	Advanced American Construction	Sampling Date					
Sampling Event	December 2006	Sample Name	AF1-				
Sub Area		Sample Depth	12				
FSDS QA:		Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters		--	--				--	--	

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater		VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	RGA				
Project Name	Advanced American Construction	Sampling Date	5/26/2006				
Sampling Event	2nd Qtr Stormwater	Sample Name	AF1-052606				
Sub Area		Sample Depth	12				
FSDS QA:		Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters									
	10:35	--	--	7.56	13.3	83.5	--	--	5.21

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	10:35:00 AM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000107

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One		
Project #	0100.01.01	Sampler	RGA/JJP		
Project Name	Advanced American Construction	Sampling Date	11/7/2006		
Sampling Event	4th Qtr Stormwater 2006	Sample Name	AF1-110706		
Sub Area		Sample Depth	12		
FSDS QA:	BTF 12/12/2006	Easting		Northing	
				TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	12:48	--	--	7.21	16.0	185	--	--	

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	1:00:00 PM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000108

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	SM/RA				
Project Name	Advanced American Construction	Sampling Date	5/2/2007				
Sampling Event	Second Quarter Stormwater	Sample Name	AF1-050207				
Sub Area		Sample Depth	12				
FSDS QA:	SM 5/02/2007	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/l x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	12:42	--	--	7.52	11.6	53.2	--	--	6.12

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	12:40:00 PM	VOA-Glass	3	No
			Amber Glass	3	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	7	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000109

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One		
Project #	0100.01.01	Sampler	RGA		
Project Name	Advanced American Construction	Sampling Date	5/26/2006		
Sampling Event	2nd Qtr Stormwater	Sample Name	AF1-052606		
Sub Area		Sample Depth	12		
FSDS QA:		Easting		Northing	
				TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/l x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	10:35	--	--	7.56	13.3	83.5	--	--	5.21

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	10:35:00 AM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000110

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One		
Project #	0100.01.01	Sampler	RGA/JJP		
Project Name	Advanced American Construction	Sampling Date	11/7/2006		
Sampling Event	4th Qtr Stormwater 2006	Sample Name	AF1-110706		
Sub Area		Sample Depth	12		
FSDS QA:	BTF 12/12/2006	Easting		Northing	
				TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	12:48	--	--	7.21	16.0	185	--	--	

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	1:00:00 PM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000111

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler					
Project Name	Advanced American Construction	Sampling Date					
Sampling Event	December 2006	Sample Name	AF1-				
Sub Area		Sample Depth	12				
FSDS QA:		Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters									
		--	--				--	--	

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater		VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	6	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000112

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B, Vancouver, WA 98665 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Advanced American Construction Inc.	Sample Location	Outfall One				
Project #	0100.01.01	Sampler	SM/RA				
Project Name	Advanced American Construction	Sampling Date	5/2/2007				
Sampling Event	Second Quarter Stormwater	Sample Name	AF1-050207				
Sub Area		Sample Depth	12				
FSDS QA:	SM 5/02/2007	Easting		Northing		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	EH	Turbidity
Final Field Parameters	12:42	--	--	7.52	11.6	53.2	--	--	6.12

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear and colorless

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Stormwater	12:40:00 PM	VOA-Glass	3	No
			Amber Glass	3	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly		
			Total Bottles	7	

General Sampling Comments

Sample was taken by zip tying tubing to a long pole and placing the bottom of the tubing into the water flow in the bottom of the man hole and pumping with a peristaltic pump.

Signature _____

AAC000113

**DATA QUALITY ASSURANCE/QUALITY CONTROL
MEMORANDUM**

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

ADVANCED AMERICAN CONSTRUCTION PROPERTIES, LLC

Stormwater Sampling—May 2007

0100.01.02

This report reviews the analytical results for a stormwater sample collected by Maul Foster & Alongi, Inc. at the Advanced American Construction Properties, LLC site at 8444 NW St. Helens Road in Portland, Oregon. The sample was collected on May 2, 2007.

Specialty Analytical (SA) in Tualatin, Oregon, performed the analysis. SA report number 0705023rev2 was reviewed. The analyses performed are listed below.

Analysis	Reference
Diesel and lube oil	NWTPH-Dx
Gasoline-range organics	NWTPH-Gx
Total metals	USEPA 6010/6020
Polycyclic aromatic hydrocarbons	USEPA 8270 SIM
NOTES: NWTPH = Northwest Total Petroleum Hydrocarbons SIM = selected ion monitoring USEPA = U.S. Environmental Protection Agency	

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable parts of USEPA procedures (USEPA, 1994, 1999), and appropriate laboratory and method-specific guidelines (SA, 2006; USEPA, 1986). Data validation procedures were modified, as appropriate, to accommodate quality control requirements for methods not specifically addressed by the functional guidelines (i.e., hydrocarbon analyses).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Holding Times, Preservation, and Sample Storage

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Blanks

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. No target analytes were detected above the SA reporting limits (RLs), except naphthalene by USEPA Method 8270SIM. As a result, the reviewer has qualified the naphthalene result in sample AF1-050207 as estimated "UJ" and raised the detection limit. Note that the result is less than five times the method blank detection.

Equipment Rinsate Blanks

Rinsate blanks were not necessary and were therefore not submitted with this sample.

Surrogate Recovery Results

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogates were extracted and analyzed at the required frequency. All surrogate percent recoveries were within acceptance limits.

Matrix Spike/Matrix Spike Duplicate Results

MS/MSD results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. All percent recoveries and relative percent differences (RPDs) were acceptable. All percent recoveries and RPDs were acceptable.

Laboratory Control Sample / Laboratory Control Sample Duplicate Results

A laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) are spiked with target analytes to provide information on laboratory accuracy. The

LCS/LCSD samples were extracted and analyzed at the required frequency. All LCS/LCSD analytes were within acceptance limits for percent recovery and RPDs.

Laboratory Duplicate Results

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. All RPDs were within SA acceptance limits.

Field Duplicate Results

Field duplicate samples were not analyzed for this location.

Reporting Limits

SA used routine RLs to quantify the analytical results.

Data Package

The data packages were reviewed for transcription errors, omissions, or anomalies. None were found.

REFERENCES

- SA. 2006. Quality assurance manual. Specialty Analytical, Tualatin, Oregon.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).
- USEPA. 1994. USEPA contract laboratory program, national functional guidelines for inorganics data review. EPA 540/R-94/013. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. February.
- USEPA. 1999. USEPA contract laboratory program, national functional guidelines for organics data review. EPA540/R-99/008. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. October.

DOCUMENT PRODUCTION FORM

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Task Number: 00

Timesheet Description: May 2007 SW Sampling Event

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MEMORANDUM

TO: Mr. Mark Pugh, Oregon Department of Environmental Quality DATE: June 28, 2005

FROM: Anna St. John, RG PROJECT: 0100.01.02

RE: Summary of Soil Sampling and Analyses for Source Control, Former Marine Finance Corporation Property, Portland, Oregon (DEQ Prospective Purchaser Agreement No. 04-08)

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster and Alongi, Inc. (MFA) prepared this memorandum to summarize the soil sampling and analyses that were performed as part of upland source control measures for the former Marine Finance Corporation property at 8444 NW St. Helens Road, Portland, Oregon. The property was purchased by AACP on November 24, 2004. AACP signed a Prospective Purchaser Agreement (PPA) with the Oregon Department of Environmental Quality (DEQ) on November 16, 2004. The October 20, 2004, *Source Control Evaluation and Plan* (the Plan) serves as the scope of work for the PPA.

AACP plans to redevelop the property for river-related uses. Redevelopment will involve demolishing existing structures; regrading and resurfacing the site; constructing a large warehouse and office; and installing infrastructure and a stormwater management system. The site (landward from the top of the bank) will be covered mostly with buildings, asphalt, concrete, or gravel. Figure 1 shows the proposed redevelopment plan approved by the City of Portland. The tentative schedule for site redevelopment activities follows:

- Demolition of existing structures—June 20 – July 1, 2005
- Excavation, grading and site preparation—July 5-13, 2005
- Pile Driving—July 14-20, 2005
- Start building construction—July 21, 2005

Based on the risk screening and source control evaluation, surface soil (0 to 2 feet below ground surface [bgs]) with concentrations exceeding the source control criteria requires some form of management to mitigate possible transport of impacted soil to the river. Figure 1 shows the sample locations included in the soil management area for implementation of source control measures. This memorandum summarizes pre-excavation sampling and analyses to determine the vertical and lateral extent of impacted soil to be managed.

MFA conducted soil sampling and analyses during April and May. Samples were collected using procedures summarized in Section 6 of the Plan. The project Health and Safety Plan in Appendix C of the Plan was followed. Before sampling began, MFA contracted with Statewide Land Surveying, Inc., of Gresham, Oregon, to locate and mark the sample locations. Samples were collected and analyzed in a tiered manner. Soil samples were collected at the ground surface, 1

foot bgs, and 2 feet bgs at each sample location using a direct-push drilling unit operated by Geo-Tech Explorations-Boart Longyear of Tualatin, Oregon. The sample locations are shown on Figure 1 (SS-7, SS-9, SS-12, SS-15 through SS-18, SS-20, and SS-21). To determine the vertical and lateral extent of impacts, MFA located samples within 5-foot, 10-foot, and 20-foot diameters of each sample location, and at the ground surface, 1 foot bgs, and 2 feet bgs. Three borings were advanced at each diameter distance (at 0 degrees, 120 degrees, and 240 degrees relative to magnetic north), and depth-discrete samples were composited for analysis.

For purposes of the source control sampling and analyses, the following were chemicals of interest in soil:

- Benzo(a)pyrene (BaP) (see Figure 1—samples SS-7, SS-12, SS-15 through SS-18, SS-20, and SS-21)
- Copper (see Figure 1—sample SS-9)
- Lead (see Figure 1—sample SS-21)

BaP was analyzed by U.S. Environmental Protection Agency (USEPA) Method 8270-SIM. Lead and copper were analyzed by USEPA Method 6010. Analyses were performed by Specialty Analytical of Tualatin, Oregon. Method reporting limits did not exceed the source control criteria. Samples were analyzed in a tiered manner. Initially, depth-discrete samples collected at each location and at a 5-foot diameter around each location were analyzed. Because concentrations exceeded source control criteria in some samples, additional samples collected from the 10-foot- and 20-foot-diameter distances were analyzed. Because concentrations exceeded source control criteria in some of these samples, additional samples from 30-foot-, 40-foot-, and 50-foot-diameter distances were collected and analyzed. Tables 1 and 2 summarize the results. Figure 1 shows sample locations and the extent of soil requiring management. Attachment A contains the laboratory analytical results. Attachment B contains data quality assurance/quality control memoranda.

Figure 1 shows the extent of soil requiring management based on the results of the source control screening. Generally, detected concentrations exceeded their respective source control screening levels, except for copper concentrations near SS-9. Some detected concentrations exceeded risk-based concentrations (RBCs) for occupational workers based on direct contact with soil (e.g., USEPA Region 9 preliminary remediation goals [PRGs]¹ and/or the DEQ's RBCs for petroleum-contaminated sites²), but did not exceed RBCs for construction or excavation workers based on direct contact, except for one sample near SS-15 (SS15-30Dup) and one sample near SS-20 (SS20-10-1) (see Table 1).

¹ USEPA. Region 9 preliminary remediation goals. U.S. Environmental Protection Agency. October 1, 2004. The PRG is based on direct contact with soil by occupational workers.

² DEQ. Risk-based decision making for the remediation of petroleum-contaminated sites. Oregon Department of Environmental Quality. September 22, 2003. The RBC is the lowest value based on direct contact with soil by occupational, construction, or excavation workers; volatilization to outdoor air; or vapor intrusion into buildings.

Table 3 summarizes estimated soil volumes for management. MFA recommends that soil around SS-12, SS-15, SS-16, SS-17, SS-18, SS-20, and SS-21 be excavated and placed under the footprint of the future building where future occupational workers will not contact the material. Approximately 1,070 cubic yards will be excavated and placed under the building slab. This area will be surveyed and noted on the deed. The excavations will be surveyed, backfilled with clean, imported fill, graded, and paved, except for locations SS-12 (located below the top of the bank in the former ferry landing area), SS-17 and SS-18, which will be backfilled, graded and covered with gravel.

Attachments: Tables
Figure
A—Laboratory Analytical Reports
B—Data Quality Assurance/Quality Control Memoranda

Distribution: Dee Burch and Scott Burgess, Advanced American Construction Properties, LLC
Ed Trompke, Jordan Schrader

TABLES

Table 1
Summary of Benzo(a)pyrene in Soil (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene	
USEPA Region 9 PRGs (Industrial)					210	x 100
DEQ RBC (Excavation Worker)					59,000	
DEQ RBC (Construction Worker)					2,100	
DEQ RBC (Occupational)					270	
Source Control Screening Level					100	x 10
SS7	SS7-0	0504037-01A	4/8/2005	0	110	
SS7	SS7-1	0504037-02A	4/8/2005	1	6.67 U	
SS7	SS7-2	0504037-03A	4/8/2005	2	6.67 U	
SS7-5	SS7-5-0	0504037-04A	4/8/2005	0	146	
SS7-5	SS7-5-1	0504037-07A	4/8/2005	1	6.67 U	
SS7-5	SS7-5-2	0504037-10A	4/8/2005	2	23.3	
SS7-10	SS7-10-0	0504037-05A	4/8/2005	0	108	
SS7-10	SS7-10-1	0504037-08A	4/8/2005	1	54.7	
SS7-20	SS7-20-0	0504037-06A	4/8/2005	0	201	
SS7-20	SS7-20-1	0504037-09A	4/8/2005	1	73.3	
SS7-30	SS7-30-1	0505158-24A	5/25/2005	1	74.7	
SS7-40	SS7-40-1	0505158-23A	5/25/2005	1	40.0	
SS7-50	SS7-50-1	0505158-22A	5/25/2005	1	38.7	
SS7-50	SS7-50Dup	0505158-22A	5/25/2005	1	14.7	
SS12	SS12-0	0504037-15A	4/8/2005	0	117	
SS12	SS12-1	0504037-16A	4/8/2005	1	78.7 J	
SS12	SS12-1-Dup	0504037-16A	4/8/2005	1	150 J	
SS12	SS12-2	0504037-18A	4/8/2005	2	230	
SS12-5	SS12-5-0	0504037-19A	4/8/2005	0	325	
SS12-5	SS12-5-1	0504037-22A	4/8/2005	1	30.7	
SS12-5	SS12-5-2	0504037-25A	4/8/2005	2	123	
SS12-10	SS12-10-0	0504037-20A	4/8/2005	0	165	
SS12-10	SS12-10-1	0504037-23A	4/8/2005	1	127	
SS12-10	SS12-10-2	0504037-26A	4/8/2005	2	131	
SS12-20	SS12-20-0	0504037-21A	4/8/2005	0	170	
SS12-20	SS12-20-1	0504037-24A	4/8/2005	1	48.0	
SS12-20	SS12-20-2	0504037-27A	4/8/2005	2	78.7	
SS12-30	SS12-30-1	0505158-21A	5/25/2005	1	262	
SS12-40	SS12-40-1	0505158-20A	5/25/2005	1	132	
SS12-50	SS12-50-1	0505158-19A	5/25/2005	1	365	
SS15	SS15-0	0504037-28A	4/8/2005	0	151	1, 0
SS15	SS15-1	0504037-29A	4/8/2005	1	111	5, 2
SS15	SS15-2	0504037-30A	4/8/2005	2	97.3	10, 0
SS15-5	SS15-5-0	0504037-31A	4/8/2005	0	1040 ✓	20, 1, 7
SS15-5	SS15-5-1	0504037-33A	4/8/2005	1	434	30, 2
SS15-5	SS15-5-2	0504037-36A	4/8/2005	2	42.0	40, 2

At least 3:00,

Table 1
Summary of Benzo(a)pyrene in Soil (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRGs (Industrial)					210
DEQ RBC (Excavation Worker)					59,000
DEQ RBC (Construction Worker)					2,100
DEQ RBC (Occupational)					270
Source Control Screening Level					100
SS15-10	SS15-10-0	0504037-32A	4/8/2005	0	1120 ✓
SS15-10	SS15-10-1	0504037-34A	4/8/2005	1	88.0
SS15-10	SS15-10-2	0504037-35A	4/8/2005	2	90.7
SS15-20	SS15-20-0	0504089-01A	4/22/2005	0	1150 ✓
SS15-20	SS15-20-1	0504089-02A	4/22/2005	0 1	203
SS15-20	SS15-20-1.7	0504089-03A	4/22/2005	0 4.7	191
SS15-30	SS15-30-1	0505158-31A	5/25/2005	1	30.7
SS15-30	SS15-30-2	0505158-28A	5/25/2005	2	88.7 J
SS15-30	SS15-30Dup	0505158-28A	5/25/2005	2	4250 J ✓
SS15-40	SS15-40-1	0505158-30A	5/25/2005	1	36.0
SS15-40	SS15-40-2	0505158-27A	5/25/2005	2	325
SS15-50	SS15-50-1	0505158-29A	5/25/2005	1	39.3
SS15-50	SS15-50-2	0505158-26A	5/25/2005	2	37.3
SS16	SS16-0	0504037-37A	4/8/2005	0	53.3
SS16	SS16-1	0504037-38A	4/8/2005	1	41.3
SS16	SS16-2	0504037-39A	4/8/2005	2	98.7
SS16-5	SS16-5-0	0504037-40A	4/8/2005	0	383
SS16-5	SS16-5-1	0504037-43A	4/8/2005	1	92.7
SS16-5	SS16-5-2	0504037-46A	4/8/2005	2	73.3 J
SS16-5	SS16-5-2-Dup	0504037-46A	4/8/2005	2	30.0 J
SS16-10	SS16-10-0	0504037-41A	4/8/2005	0	56.0
SS16-10	SS16-10-1	0504037-44A	4/8/2005	1	81.3
SS16-20	SS16-20-0	0504037-42A	4/8/2005	0	231
SS16-20	SS16-20-1	0504037-45A	4/8/2005	1	173
SS16-30	SS16-30-2	0505158-18A	5/24/2005	2	225
SS16-40	SS16-40-2	0505158-17A	5/24/2005	2	358
SS16-50	SS16-50-2	0505158-16A	5/24/2005	2	528
SS17	SS17-0	0504037-50A	4/7/2005	0	48.7
SS17	SS17-1	0504037-51A	4/7/2005	1	24.0 J
SS17	SS17-Dup	0504037-51A	4/7/2005	1	67.3 J
SS17	SS17-2	0504037-53A	4/7/2005	2	40.7
SS17-5	SS17-5-0	0504037-54A	4/7/2005	0	103
SS17-5	SS17-5-1	0504037-57A	4/7/2005	1	10.7
SS17-5	SS17-5-2	0504037-60A	4/7/2005	2	75.3
SS17-10	SS17-10-0	0504037-55A	4/7/2005	0	147
SS17-10	SS17-10-1	0504037-58A	4/7/2005	1	77.3
SS17-20	SS17-20-0	0504037-56A	4/7/2005	0	38.0
SS17-20	SS17-20-1	0504037-59A	4/7/2005	1	124
SS17-30	SS17-30-1	0505158-06A	5/24/2005	1	86.7
SS17-30	SS17-30-2	0505158-05A	5/24/2005	2	21.3

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Table 1
Summary of Benzo(a)pyrene in Soil (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRGs (Industrial)					210
DEQ RBC (Excavation Worker)					59,000
DEQ RBC (Construction Worker)					2,100
DEQ RBC (Occupational)					270
Source Control Screening Level					100
SS17-40	SS17-40-1	0505158-04A	5/24/2005	1	311
SS17-40	SS17-40-2	0505158-03A	5/24/2005	2	50.0
SS17-50	SS17-50-1	0505158-02A	5/24/2005	1	43.3
SS17-50	SS17-50-2	0505158-01A	5/24/2005	2	88.0
SS18	SS18-0	0504037-63A	4/7/2005	0	68.7
SS18	SS18-1	0504037-64A	4/7/2005	1	54.0
SS18	SS18-2	0504037-65A	4/7/2005	2	207
SS18-5	SS18-5-0	0504037-66A	4/7/2005	0	227
SS18-5	SS18-5-1	0504037-69A	4/7/2005	1	185
SS18-5	SS18-5-2	0504037-73A	4/7/2005	2	63.3
SS18-10	SS18-10-0	0504037-67A	4/7/2005	0	321
SS18-10	SS18-10-1	0504037-70A	4/7/2005	1	42.7
SS18-10	SS18-10-2	0504037-74A	4/7/2005	2	48.7
SS18-20	SS18-20-0	0504037-68A	4/7/2005	0	175
SS18-20	SS18-20-1	0504037-72A	4/7/2005	1	176
SS18-20	SS18-20-2	0504037-75A	4/7/2005	2	573
SS18-30	SS18-30-2	0505158-09A	5/24/2005	2	42.7
SS18-40	SS18-40-2	0505158-08A	5/24/2005	2	318
SS18-50	SS18-50-2	0505158-07A	5/24/2005	2	118
SS20	SS20-0	0504037-76A	4/7/2005	0	80.0
SS20	SS20-1	0504037-77A	4/7/2005	1	421
SS20	SS20-2	0504037-78A	4/7/2005	2	114
SS20-5	SS20-5-0	0504037-79A	4/7/2005	0	66.0
SS20-5	SS20-5-1	0504037-82A	4/7/2005	1	339
SS20-5	SS20-5-2	0504037-85A	4/7/2005	2	317
SS20-10	SS20-10-0	0504037-80A	4/7/2005	0	76.0
SS20-10	SS20-10-1	0504037-83A	4/7/2005	1	14600
SS20-10	SS20-10-2	0504037-86A	4/7/2005	2	467
SS20-20	SS20-20-0	0504037-81A	4/7/2005	0	41.3
SS20-20	SS20-20-1	0504037-84A	4/7/2005	1	455
SS20-20	SS20-20-2	0504037-87A	4/7/2005	2	485
SS20-30	SS20-30-2	0505158-12A	5/24/2005	2	81.3
SS20-40	SS20-40-2	0505158-11A	5/24/2005	2	135
SS20-50	SS20-50-2	0505158-10A	5/24/2005	2	317
SS21	SS21-0	0504038-01A	4/7/2005	0	123
SS21	SS21-1	0504038-02A	4/7/2005	1	532
SS21	SS21-2	0504038-03A	4/7/2005	2	703

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2,20

2,40

2,50

2,0

2,5

2,10

2,20

2,40

2,50

2,0

Table 1
Summary of Benzo(a)pyrene in Soil (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRGs (Industrial)					210
DEQ RBC (Excavation Worker)					59,000
DEQ RBC (Construction Worker)					2,100
DEQ RBC (Occupational)					270
Source Control Screening Level					100
SS21-5	SS21-5-0	0504038-04A	4/7/2005	0	178
SS21-5	SS21-5-0-Dup	0504038-04A	4/7/2005	0	183
SS21-5	SS21-5-1	0504038-08A	4/7/2005	1	1580 ✓
SS21-5	SS21-5-2	0504038-11A	4/7/2005	2	1330 ✓
SS21-10	SS21-10-0	0504038-06A	4/7/2005	0	143
SS21-10	SS21-10-1	0504038-09A	4/7/2005	1	455
SS21-10	SS21-10-2	0504038-12A	4/7/2005	2	749
SS21-20	SS21-20-1	0504038-10A	4/7/2005	1	327
SS21-20	SS21-20-2	0504038-13A	4/7/2005	2	481
SS21-30	SS21-30-2	0505158-15A	5/24/2005	2	447
SS21-40	SS21-40-2	0505158-14A	5/24/2005	2	145
SS21-50	SS21-50-2	0505158-13A	5/24/2005	2	950
NOTES: Bold font indicates that the concentration exceeds a screening level. DEQ = Oregon Department of Environmental Quality. bgs = below ground surface. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. µg/kg = micrograms per kilogram. PRGs = preliminary remediation goals (USEPA, 2004). RBC = risk-based concentrations (DEQ, 2003). Source Control Screening Level = DEQ Screening Level Value for aquatic receptors in sediment, based on bioaccumulation. USEPA = U.S. Environmental Protection Agency.					

2, 5
2, 10

Table 2
Summary of Copper and Lead in Soil (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Copper	Lead
USEPA Region 9 PRGs (Industrial)					41000	
DEQ RBC (Occupational)					NA	750
Source Control Screening Levels					149	128
SS21	SS21-0	0504038-01A	4/7/2005	0	--	107
SS21	SS21-1	0504038-02A	4/7/2005	1	--	5.88
SS21	SS21-2	0504038-03A	4/7/2005	2	--	7.06
SS21-5	SS21-5-0	0504038-04A	4/7/2005	0	--	111
SS21-5	SS21-5-0-Dup	0504038-04A	4/7/2005	0	--	85.3
SS21-5	SS21-5-1	0504038-08A	4/7/2005	1	--	3.73
SS21-5	SS21-5-2	0504038-11A	4/7/2005	2	--	9.48
SS21-10	SS21-10-0	0504038-06A	4/7/2005	0	--	59.5
SS21-10	SS21-10-1	0504038-09A	4/7/2005	1	--	4.52
SS21-10	SS21-10-2	0504038-12A	4/7/2005	2	--	9.20
SS21-20	SS21-20-1	0504038-10A	4/7/2005	1	--	30.2
SS21-20	SS21-20-2	0504038-13A	4/7/2005	2	--	6.52
SS9	SS9-0	0504037-13A	4/8/2005	0	109 J	--
SS9-5	SS9-5-0	0504037-14A	4/8/2005	0	102 J	--
NOTES: -- = not analyzed. bgs = below ground surface. DEQ = Oregon Department of Environmental Quality. J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. mg/kg = milligrams per kilogram. NA = not applicable. PRGs = preliminary remediation goals (USEPA, 2004). RBC = risk-based concentrations for soil (DEQ, 2003). Source Control Screening Level = DEQ Screening Level Value for aquatic receptors in sediment based on bioaccumulation. USEPA = U.S. Environmental Protection Agency.						

Table 3
Recommended Soil Management Plan
Advanced American Construction Properties, LLC
Portland, Oregon

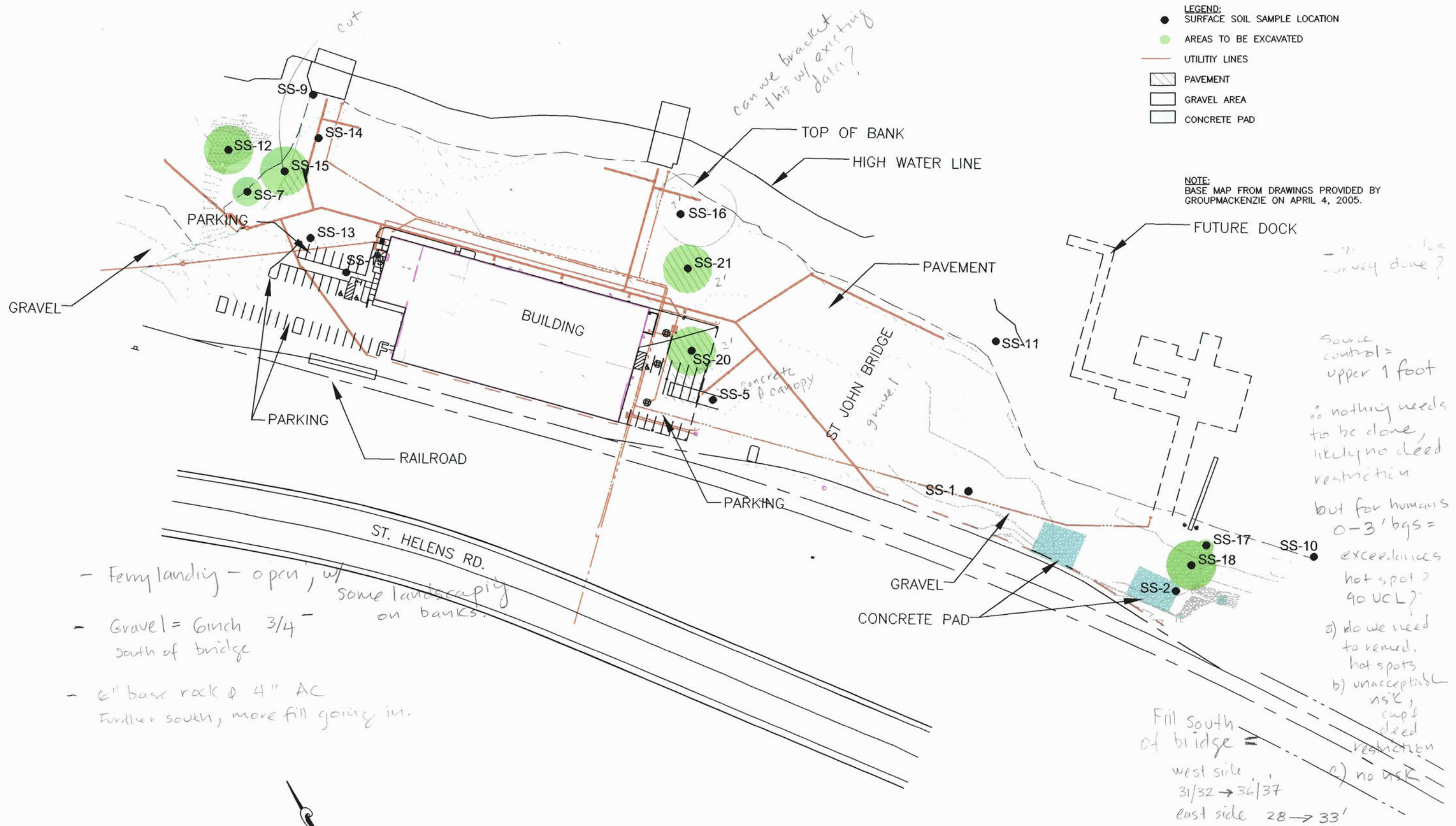
Sample Location	Horizontal Impacts	Vertical Impacts	Volume of Impacted Soil		Comments
	(diameter in feet)	(feet bgs)	(CY)	(ton)	
SS7	30	1	26	17.5	Concentrations > SLV at 0 feet bgs within 20 feet of the sample location. Concentrations do not exceed the PRG or RBCs. Soil will be removed to 1 foot bgs within 30 feet of the sample location. The area will be paved as part of redevelopment.
SS9	NA	NA	NA	NA	Concentrations of Cu < SLV. No management is necessary. The area will be paved as part of redevelopment.
SS12	50	3	218	145	Concentrations > SLV to 2 feet bgs within 50 feet of the sample location. Concentrations > SLV, RBCs, and/or PRG will be removed to 3 feet bgs within 50 feet of the sample location. The area is located below the top of the bank in the former ferry landing area.
SS15	50	3	218	145	Concentrations > SLV to 2 feet bgs within 50 feet of the sample location. Concentrations > SLV, RBC, and/or PRG will be removed to 3 feet bgs within 50 feet of the sample location. Detected concentrations do not exceed the RBCs for construction and excavation workers, except at 2 feet bgs at 50 feet from SS-15. The area will be paved as part of redevelopment.
SS16	5	1	20	13	Concentrations > SLV, PRG, and RBC at 0 foot bgs at 5 feet from the sample location. Soil will be removed to 1 foot bgs between 2.5 and 7.5 feet of the sample location. Concentrations > SLV and/or PRG at 20 feet, 40 feet, and 50 feet from the sample location do not appear to be related to SS-16. Detected concentrations do not exceed the RBCs for construction and excavation workers. This area will be paved as part of redevelopment.
SS17	15	1	6.5	4.4	Concentrations > SLV at 0 feet bgs between 5 and 20 feet. Soil will be removed to 1 foot bgs. Concentration > SLV, PRG, and RBC at 40 feet from the sample location does not appear to be related to SS-17. Detected concentrations do not exceed the RBCs for construction and excavation workers. This area will be covered with gravel as part of redevelopment.

Table 3
Recommended Soil Management Plan
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Horizontal Impacts	Vertical Impacts	Volume of Impacted Soil		Comments
	(diameter in feet)	(feet bgs)	(CY)	(ton)	
SS18	50	3	145	97	Concentrations > SLV, PRG and/or RBC to 2 feet bgs within 50 feet of the sample location. Concentrations > SLV, RBC, and/or PRG will be removed to 3 feet bgs within 50 feet of the sample location. Detected concentrations do not exceed the RBCs for construction and excavation workers. This area will be covered with gravel as part of redevelopment.
SS20	50	3	218	145	Concentrations > SLV, PRG, and/or RBC to 2 feet bgs within 50 feet of the sample location. Concentrations > SLV, RBC, and/or PRG will be removed to 3 feet bgs within 50 feet of the sample location. Detected concentrations do not exceed the RBCs for construction and excavation workers, except at 1 foot bgs at 10 feet from SS-20. This area will be paved as part of redevelopment.
SS21	50	3	218	145	Concentrations > SLV, PRG, and/or RBC to 2 feet bgs within 50 feet of the sample location. Concentrations > SLV, RBC, and/or PRG will be removed to 3 feet bgs within 50 feet of the sample location. Detected concentrations do not exceed the RBCs for construction and excavation workers. This area will be paved as part of redevelopment.
<p>NOTES:</p> <p>CY = cubic yard</p> <p>bgs = below ground surface.</p> <p>Cu = copper.</p> <p>NA = not applicable.</p> <p>PRG = U.S. Environmental Protection Agency (USEPA) preliminary remediation goal (USEPA, 2004).</p> <p>RBC = Oregon Department of Environmental Quality (DEQ) risk-based concentration for direct contact with soil by occupational workers (DEQ, 2003).</p> <p>SLV = DEQ ecological screening level value for possible toxicity (Cu) or bioaccumulation (benzo[a]pyrene) related to chemicals in sediment.</p>					

FIGURE

File: G:\0000_0100_01_4D\AMER CONSTRUCTION\02_FIG01_SITE DEVELOPMENT PLAN_REV 3.DWG Last edited: JUN. 28, 2005 @ 4:19 p.m. by: agious 100%clt

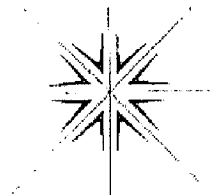


- Ferry landing - open, w/ some landscaping on banks.
- Gravel = 6 inch 3/4" south of bridge
- 6" base rock & 4" AC Further south, more fill going in.



Vancouver: (360) 694-2691 Portland: (971) 544-2139	MAUL FOSTER ALONGI INC.	DATE 06/23/05 DWN. AJY APPR. ASJ REVIS. PROJECT NO. 0100.01.02	Figure 1 ADVANCED AMERICAN CONSTRUCTION PROPERTIES, LLC PORTLAND, OREGON SITE DEVELOPMENT PLAN
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ATTACHMENT A
LABORATORY ANALYTICAL REPORTS



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-8007

April 21, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139
FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0504037

Specialty Analytical received 87 samples on 4/11/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

AAC000135

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi

Lab Order: 0504037

Project: AACP / 0100.01.02

Lab ID: 0504037-01

Collection Date: 4/8/2005 10:15:00 AM

Client Sample ID: SS7-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	110	6.67		µg/Kg	1	4/12/2005 3:54:00 PM
Surr: p-Terphenyl-d14	75.1	44.9-155		%REC	1	4/12/2005 3:54:00 PM

Lab ID: 0504037-02

Collection Date: 4/8/2005 10:17:00 AM

Client Sample ID: SS7-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	ND	6.67		µg/Kg	1	4/12/2005 4:25:00 PM
Surr: p-Terphenyl-d14	87.0	44.9-155		%REC	1	4/12/2005 4:25:00 PM

Lab ID: 0504037-03

Collection Date: 4/8/2005 10:19:00 AM

Client Sample ID: SS7-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	ND	6.67		µg/Kg	1	4/12/2005 4:57:00 PM
Surr: p-Terphenyl-d14	90.9	44.9-155		%REC	1	4/12/2005 4:57:00 PM

Lab ID: 0504037-04

Collection Date: 4/8/2005 10:15:00 AM

Client Sample ID: SS7-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	146	6.67		µg/Kg	1	4/13/2005 10:37:00 AM
Surr: p-Terphenyl-d14	88.7	44.9-155		%REC	1	4/13/2005 10:37:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0504037**Lab ID:** 0504037-05**Collection Date:** 4/8/2005 10:27:00 AM**Client Sample ID:** SS7-10-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	108	6.67		µg/Kg	1	4/19/2005 12:03:00 PM
Surr: p-Terphenyl-d14	101	44.9-155		%REC	1	4/19/2005 12:03:00 PM

Lab ID: 0504037-06**Collection Date:** 4/8/2005 10:29:00 AM**Client Sample ID:** SS7-20-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	201	6.67		µg/Kg	1	4/19/2005 12:35:00 PM
Surr: p-Terphenyl-d14	99.9	44.9-155		%REC	1	4/19/2005 12:35:00 PM

Lab ID: 0504037-07**Collection Date:** 4/8/2005 10:17:00 AM**Client Sample ID:** SS7-5-1**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	ND	6.67		µg/Kg	1	4/12/2005 6:00:00 PM
Surr: p-Terphenyl-d14	103	44.9-155		%REC	1	4/12/2005 6:00:00 PM

Lab ID: 0504037-08**Collection Date:** 4/8/2005 10:23:00 AM**Client Sample ID:** SS7-10-1**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	54.7	13.3		µg/Kg	1	4/19/2005 1:06:00 PM
Surr: p-Terphenyl-d14	96.7	44.9-155		%REC	1	4/19/2005 1:06:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-09

Collection Date: 4/8/2005 10:29:00 AM

Client Sample ID: SS7-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	73.3	13.3		µg/Kg	1	4/19/2005 1:38:00 PM
Surr: p-Terphenyl-d14	110	44.9-155		%REC	1	4/19/2005 1:38:00 PM

Lab ID: 0504037-10

Collection Date: 4/8/2005 10:19:00 AM

Client Sample ID: SS7-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	23.3	6.67		µg/Kg	1	4/12/2005 6:31:00 PM
Surr: p-Terphenyl-d14	93.7	44.9-155		%REC	1	4/12/2005 6:31:00 PM

Lab ID: 0504037-11

Collection Date: 4/8/2005 10:25:00 AM

Client Sample ID: SS7-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: ADM

Hold	HOLD				1	4/20/2005
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Lab ID: 0504037-12

Collection Date: 4/8/2005 10:31:00 AM

Client Sample ID: SS7-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: ADM

Hold	HOLD				1	4/20/2005
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Lab ID: 0504037-13

Collection Date: 4/8/2005 12:00:00 PM

Client Sample ID: SS9-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Copper	109	1.47		mg/Kg	2	4/14/2005 1:10:03 PM
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Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-14

Collection Date: 4/8/2005 12:10:00 PM

Client Sample ID: SS9-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Copper	102	1.47		mg/Kg	2	4/14/2005 1:25:49 PM
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Lab ID: 0504037-15

Collection Date: 4/8/2005 9:23:00 AM

Client Sample ID: SS12-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	117	6.67		µg/Kg	1	4/12/2005 7:02:00 PM
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Surr: p-Terphenyl-d14	98.3	44.9-155		%REC	1	4/12/2005 7:02:00 PM
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Lab ID: 0504037-16

Collection Date: 4/8/2005 9:25:00 AM

Client Sample ID: SS12-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	78.7	13.3		µg/Kg	1	4/12/2005 7:34:00 PM
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Surr: p-Terphenyl-d14	110	44.9-155		%REC	1	4/12/2005 7:34:00 PM
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Lab ID: 0504037-17

Collection Date: 4/8/2005 9:25:00 AM

Client Sample ID: SS12-1-D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	150	33.3		µg/Kg	1	4/13/2005 12:42:00 PM
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Surr: p-Terphenyl-d14	108	44.9-155		%REC	1	4/13/2005 12:42:00 PM
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Lab ID: 0504037-18

Collection Date: 4/8/2005 9:27:00 AM

Client Sample ID: SS12-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	230	33.3		µg/Kg	1	4/13/2005 12:48:00 AM
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Surr: p-Terphenyl-d14	111	44.9-155		%REC	1	4/13/2005 12:48:00 AM
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Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-19

Collection Date: 4/8/2005 9:40:00 AM

Client Sample ID: SS12-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	325	6.67		µg/Kg	1	4/12/2005 8:05:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	4/12/2005 8:05:00 PM

Lab ID: 0504037-20

Collection Date: 4/8/2005 9:46:00 AM

Client Sample ID: SS12-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	165	13.3		µg/Kg	1	4/19/2005 4:34:00 PM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	4/19/2005 4:34:00 PM

Lab ID: 0504037-21

Collection Date: 4/8/2005 9:52:00 AM

Client Sample ID: SS12-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	170	6.67		µg/Kg	1	4/19/2005 5:06:00 PM
Surr: p-Terphenyl-d14	111	44.9-155		%REC	1	4/19/2005 5:06:00 PM

Lab ID: 0504037-22

Collection Date: 4/8/2005 9:42:00 AM

Client Sample ID: SS12-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	30.7	13.3		µg/Kg	1	4/12/2005 8:37:00 PM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	4/12/2005 8:37:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-23

Collection Date: 4/8/2005 9:48:00 AM

Client Sample ID: SS12-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	127	13.3		µg/Kg	1	4/19/2005 5:37:00 PM
Surr: p-Terphenyl-d14	116	44.9-155		%REC	1	4/19/2005 5:37:00 PM

Lab ID: 0504037-24

Collection Date: 4/8/2005 9:54:00 AM

Client Sample ID: SS12-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	48.0	6.67		µg/Kg	1	4/19/2005 6:09:00 PM
Surr: p-Terphenyl-d14	101	44.9-155		%REC	1	4/19/2005 6:09:00 PM

Lab ID: 0504037-25

Collection Date: 4/8/2005 9:44:00 AM

Client Sample ID: SS12-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	123	13.3		µg/Kg	1	4/13/2005 12:11:00 PM
Surr: p-Terphenyl-d14	85.6	44.9-155		%REC	1	4/13/2005 12:11:00 PM

Lab ID: 0504037-26

Collection Date: 4/8/2005 9:50:00 AM

Client Sample ID: SS12-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	131	13.3		µg/Kg	1	4/19/2005 6:40:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	4/19/2005 6:40:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-27

Collection Date: 4/8/2005 9:56:00 AM

Client Sample ID: SS12-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	78.7	13.3		µg/Kg	1	4/19/2005 7:12:00 PM
Surr: p-Terphenyl-d14	112	44.9-155		%REC	1	4/19/2005 7:12:00 PM

Lab ID: 0504037-28

Collection Date: 4/8/2005 10:45:00 AM

Client Sample ID: SS15-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	151	6.67		µg/Kg	1	4/12/2005 9:08:00 PM
Surr: p-Terphenyl-d14	93.9	44.9-155		%REC	1	4/12/2005 9:08:00 PM

Lab ID: 0504037-29

Collection Date: 4/8/2005 10:47:00 AM

Client Sample ID: SS15-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	111	6.67		µg/Kg	1	4/13/2005 2:17:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	4/13/2005 2:17:00 PM

Lab ID: 0504037-30

Collection Date: 4/8/2005 10:49:00 AM

Client Sample ID: SS15-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	97.3	13.3		µg/Kg	1	4/13/2005 11:40:00 AM
Surr: p-Terphenyl-d14	88.7	44.9-155		%REC	1	4/13/2005 11:40:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-31

Collection Date: 4/8/2005 11:05:00 AM

Client Sample ID: SS15-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	1040	6.67		µg/Kg	1	4/12/2005 10:42:00 PM
Surr: p-Terphenyl-d14	93.0	44.9-155		%REC	1	4/12/2005 10:42:00 PM

Lab ID: 0504037-32

Collection Date: 4/8/2005 11:11:00 AM

Client Sample ID: SS15-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	1120	6.67		µg/Kg	1	4/19/2005 7:43:00 PM
Surr: p-Terphenyl-d14	96.2	44.9-155		%REC	1	4/19/2005 7:43:00 PM

Lab ID: 0504037-33

Collection Date: 4/8/2005 11:07:00 AM

Client Sample ID: SS15-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	434	6.67		µg/Kg	1	4/12/2005 11:14:00 PM
Surr: p-Terphenyl-d14	91.6	44.9-155		%REC	1	4/12/2005 11:14:00 PM

Lab ID: 0504037-34

Collection Date: 4/8/2005 11:13:00 AM

Client Sample ID: SS15-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	88.0	13.3		µg/Kg	1	4/19/2005 8:15:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/19/2005 8:15:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-35 Collection Date: 4/8/2005 11:15:00 AM
Client Sample ID: SS15-10-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	90.7	13.3		µg/Kg	1	4/19/2005 8:46:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	4/19/2005 8:46:00 PM

Lab ID: 0504037-36 Collection Date: 4/8/2005 11:09:00 AM
Client Sample ID: SS15-5-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	42.0	6.67		µg/Kg	1	4/12/2005 11:45:00 PM
Surr: p-Terphenyl-d14	92.2	44.9-155		%REC	1	4/12/2005 11:45:00 PM

Lab ID: 0504037-37 Collection Date: 4/8/2005 2:40:00 PM
Client Sample ID: SS16-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	53.3	6.67		µg/Kg	1	4/13/2005 12:17:00 AM
Surr: p-Terphenyl-d14	92.8	44.9-155		%REC	1	4/13/2005 12:17:00 AM

Lab ID: 0504037-38 Collection Date: 4/8/2005 2:42:00 PM
Client Sample ID: SS16-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	41.3	6.67		µg/Kg	1	4/14/2005 11:33:00 AM
Surr: p-Terphenyl-d14	96.7	44.9-155		%REC	1	4/14/2005 11:33:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0504037**Lab ID:** 0504037-39**Collection Date:** 4/8/2005 2:44:00 PM**Client Sample ID:** SS16-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	98.7	6.67		µg/Kg	1	4/14/2005 12:05:00 PM
Surr: p-Terphenyl-d14	96.4	44.9-155		%REC	1	4/14/2005 12:05:00 PM

Lab ID: 0504037-40**Collection Date:** 4/8/2005 2:50:00 PM**Client Sample ID:** SS16-5-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	383	6.67		µg/Kg	1	4/14/2005 12:36:00 PM
Surr: p-Terphenyl-d14	99.8	44.9-155		%REC	1	4/14/2005 12:36:00 PM

Lab ID: 0504037-41**Collection Date:** 4/8/2005 2:56:00 PM**Client Sample ID:** SS16-10-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	56.0	6.67		µg/Kg	1	4/19/2005 9:18:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	4/19/2005 9:18:00 PM

Lab ID: 0504037-42**Collection Date:** 4/8/2005 3:02:00 PM**Client Sample ID:** SS16-20-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	231	6.67		µg/Kg	1	4/19/2005 9:49:00 PM
Surr: p-Terphenyl-d14	92.7	44.9-155		%REC	1	4/19/2005 9:49:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-43

Collection Date: 4/8/2005 2:52:00 PM

Client Sample ID: SS16-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	92.7	6.67		µg/Kg	1	4/14/2005 1:08:00 PM
Surr: p-Terphenyl-d14	93.6	44.9-155		%REC	1	4/14/2005 1:08:00 PM

Lab ID: 0504037-44

Collection Date: 4/8/2005 2:58:00 PM

Client Sample ID: SS16-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	81.3	6.67		µg/Kg	1	4/19/2005 10:21:00 PM
Surr: p-Terphenyl-d14	81.7	44.9-155		%REC	1	4/19/2005 10:21:00 PM

Lab ID: 0504037-45

Collection Date: 4/8/2005 3:04:00 PM

Client Sample ID: SS16-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	173	6.67		µg/Kg	1	4/19/2005 10:52:00 PM
Surr: p-Terphenyl-d14	93.7	44.9-155		%REC	1	4/19/2005 10:52:00 PM

Lab ID: 0504037-46

Collection Date: 4/8/2005 2:54:00 PM

Client Sample ID: SS16-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	73.3	6.67		µg/Kg	1	4/14/2005 1:39:00 PM
Surr: p-Terphenyl-d14	103	44.9-155		%REC	1	4/14/2005 1:39:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-47

Collection Date: 4/8/2005 2:54:00 PM

Client Sample ID: SS16-5-2-D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	30.0	6.67		µg/Kg	1	4/14/2005 2:10:00 PM
Surr: p-Terphenyl-d14	96.9	44.9-155		%REC	1	4/14/2005 2:10:00 PM

Lab ID: 0504037-48

Collection Date: 4/8/2005 3:00:00 PM

Client Sample ID: SS16-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: ADM

Hold	HOLD				1	4/20/2005
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Lab ID: 0504037-49

Collection Date: 4/8/2005 3:06:00 PM

Client Sample ID: SS16-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: ADM

Hold	HOLD				1	4/20/2005
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Lab ID: 0504037-50

Collection Date: 4/7/2005 10:50:00 AM

Client Sample ID: SS17-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	48.7	6.67		µg/Kg	1	4/14/2005 2:42:00 PM
Surr: p-Terphenyl-d14	97.7	44.9-155		%REC	1	4/14/2005 2:42:00 PM

Lab ID: 0504037-51

Collection Date: 4/7/2005 10:52:00 AM

Client Sample ID: SS17-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	24.0	6.67		µg/Kg	1	4/14/2005 6:02:00 PM
Surr: p-Terphenyl-d14	94.9	44.9-155		%REC	1	4/14/2005 6:02:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0504037**Lab ID:** 0504037-52**Collection Date:** 4/7/2005 10:52:00 AM**Client Sample ID:** SS17-1-D**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	67.3	6.67		µg/Kg	1	4/13/2005 12:26:00 PM
Surr: p-Terphenyl-d14	99.2	44.9-155		%REC	1	4/13/2005 12:26:00 PM

Lab ID: 0504037-53**Collection Date:** 4/7/2005 10:54:00 AM**Client Sample ID:** SS17-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	40.7	6.67		µg/Kg	1	4/14/2005 6:33:00 PM
Surr: p-Terphenyl-d14	95.9	44.9-155		%REC	1	4/14/2005 6:33:00 PM

Lab ID: 0504037-54**Collection Date:** 4/7/2005 11:05:00 AM**Client Sample ID:** SS17-5-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	103	6.67		µg/Kg	1	4/14/2005 7:04:00 PM
Surr: p-Terphenyl-d14	99.0	44.9-155		%REC	1	4/14/2005 7:04:00 PM

Lab ID: 0504037-55**Collection Date:** 4/7/2005 11:15:00 AM**Client Sample ID:** SS17-10-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	147	6.67		µg/Kg	1	4/19/2005 11:23:00 PM
Surr: p-Terphenyl-d14	91.4	44.9-155		%REC	1	4/19/2005 11:23:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-56

Collection Date: 4/7/2005 11:09:00 AM

Client Sample ID: SS17-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	38.0	6.67		µg/Kg	1	4/19/2005 11:55:00 PM
Surr: p-Terphenyl-d14	86.0	44.9-155		%REC	1	4/19/2005 11:55:00 PM

Lab ID: 0504037-57

Collection Date: 4/7/2005 11:25:00 AM

Client Sample ID: SS17-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	10.7	6.67		µg/Kg	1	4/14/2005 7:38:00 PM
Surr: p-Terphenyl-d14	85.4	44.9-155		%REC	1	4/14/2005 7:38:00 PM

Lab ID: 0504037-58

Collection Date: 4/7/2005 11:17:00 AM

Client Sample ID: SS17-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	77.3	6.67		µg/Kg	1	4/20/2005 12:26:00 AM
Surr: p-Terphenyl-d14	79.2	44.9-155		%REC	1	4/20/2005 12:26:00 AM

Lab ID: 0504037-59

Collection Date: 4/7/2005 11:27:00 AM

Client Sample ID: SS17-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	124	6.67		µg/Kg	1	4/20/2005 11:16:00 AM
Surr: p-Terphenyl-d14	93.8	44.9-155		%REC	1	4/20/2005 11:16:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maui, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-60 Collection Date: 4/7/2005 11:09:00 AM
Client Sample ID: SS17-5-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	75.3	6.67		µg/Kg	1	4/14/2005 8:07:00 PM
Surr: p-Terphenyl-d14	99.8	44.9-155		%REC	1	4/14/2005 8:07:00 PM

Lab ID: 0504037-61 Collection Date: 4/7/2005 11:19:00 AM
Client Sample ID: SS17-10-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-62 Collection Date: 4/7/2005 11:29:00 AM
Client Sample ID: SS17-20-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-63 Collection Date: 4/7/2005 10:00:00 AM
Client Sample ID: SS18-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	68.7	6.67		µg/Kg	1	4/14/2005 8:38:00 PM
Surr: p-Terphenyl-d14	97.0	44.9-155		%REC	1	4/14/2005 8:38:00 PM

Lab ID: 0504037-64 Collection Date: 4/7/2005 10:02:00 AM
Client Sample ID: SS18-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	54.0	6.67		µg/Kg	1	4/15/2005 11:27:00 AM
Surr: p-Terphenyl-d14	100	44.9-155		%REC	1	4/15/2005 11:27:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0504037**Lab ID:** 0504037-65**Collection Date:** 4/7/2005 10:04:00 AM**Client Sample ID:** SS18-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	207	6.67		µg/Kg	1	4/14/2005 9:10:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	4/14/2005 9:10:00 PM

Lab ID: 0504037-66**Collection Date:** 4/7/2005 10:10:00 AM**Client Sample ID:** SS18-5-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	227	6.67		µg/Kg	1	4/14/2005 9:41:00 PM
Surr: p-Terphenyl-d14	103	44.9-155		%REC	1	4/14/2005 9:41:00 PM

Lab ID: 0504037-67**Collection Date:** 4/7/2005 10:20:00 AM**Client Sample ID:** SS18-10-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	321	6.67		µg/Kg	1	4/20/2005 11:48:00 AM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	4/20/2005 11:48:00 AM

Lab ID: 0504037-68**Collection Date:** 4/7/2005 10:25:00 AM**Client Sample ID:** SS18-20-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	175	6.67		µg/Kg	1	4/20/2005 12:19:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	4/20/2005 12:19:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-69

Collection Date: 4/7/2005 10:12:00 AM

Client Sample ID: SS18-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	185	6.67		µg/Kg	1	4/14/2005 10:13:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	4/14/2005 10:13:00 PM

Lab ID: 0504037-70

Collection Date: 4/7/2005 10:22:00 AM

Client Sample ID: SS18-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	42.7	6.67		µg/Kg	1	4/20/2005 12:50:00 PM
Surr: p-Terphenyl-d14	81.2	44.9-155		%REC	1	4/20/2005 12:50:00 PM

Lab ID: 0504037-71

Collection Date: 4/7/2005 10:22:00 AM

Client Sample ID: SS18-10-1-D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: ADM

Hold	HOLD				1	4/20/2005
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Lab ID: 0504037-72

Collection Date: 4/7/2005 10:24:00 AM

Client Sample ID: SS18-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	176	6.67		µg/Kg	1	4/20/2005 1:22:00 PM
Surr: p-Terphenyl-d14	95.8	44.9-155		%REC	1	4/20/2005 1:22:00 PM

Lab ID: 0504037-73

Collection Date: 4/7/2005 10:14:00 AM

Client Sample ID: SS18-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	63.3	6.67		µg/Kg	1	4/14/2005 10:44:00 PM
Surr: p-Terphenyl-d14	91.5	44.9-155		%REC	1	4/14/2005 10:44:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-74

Collection Date: 4/7/2005 10:27:00 AM

Client Sample ID: SS18-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	48.7	6.67		µg/Kg	1	4/20/2005 1:53:00 PM
Surr: p-Terphenyl-d14	85.9	44.9-155		%REC	1	4/20/2005 1:53:00 PM

Lab ID: 0504037-75

Collection Date: 4/7/2005 10:29:00 AM

Client Sample ID: SS18-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	573	6.67		µg/Kg	1	4/20/2005 2:25:00 PM
Surr: p-Terphenyl-d14	81.1	44.9-155		%REC	1	4/20/2005 2:25:00 PM

Lab ID: 0504037-76

Collection Date: 4/7/2005 1:00:00 PM

Client Sample ID: SS20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	80.0	6.67		µg/Kg	1	4/14/2005 11:15:00 PM
Surr: p-Terphenyl-d14	96.3	44.9-155		%REC	1	4/14/2005 11:15:00 PM

Lab ID: 0504037-77

Collection Date: 4/7/2005 1:02:00 PM

Client Sample ID: SS20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	421	6.67		µg/Kg	1	4/14/2005 11:47:00 PM
Surr: p-Terphenyl-d14	94.1	44.9-155		%REC	1	4/14/2005 11:47:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-78

Collection Date: 4/7/2005 1:05:00 PM

Client Sample ID: SS20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	114	6.67		µg/Kg	1	4/13/2005 12:57:00 PM
Surr: p-Terphenyl-d14	93.6	44.9-155		%REC	1	4/13/2005 12:57:00 PM

Lab ID: 0504037-79

Collection Date: 4/7/2005 1:30:00 PM

Client Sample ID: SS20-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	66.0	6.67		µg/Kg	1	4/13/2005 1:28:00 PM
Surr: p-Terphenyl-d14	99.5	44.9-155		%REC	1	4/13/2005 1:28:00 PM

Lab ID: 0504037-80

Collection Date: 4/7/2005 1:40:00 PM

Client Sample ID: SS20-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	76.0	6.67		µg/Kg	1	4/20/2005 2:56:00 PM
Surr: p-Terphenyl-d14	90.6	44.9-155		%REC	1	4/20/2005 2:56:00 PM

Lab ID: 0504037-81

Collection Date: 4/7/2005 1:50:00 PM

Client Sample ID: SS20-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	41.3	6.67		µg/Kg	1	4/20/2005 3:28:00 PM
Surr: p-Terphenyl-d14	85.0	44.9-155		%REC	1	4/20/2005 3:28:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi

Lab Order: 0504037

Project: AACP / 0100.01.02

Lab ID: 0504037-82

Collection Date: 4/7/2005 1:32:00 PM

Client Sample ID: SS20-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	339	6.67		µg/Kg	1	4/13/2005 1:59:00 PM
Surr: p-Terphenyl-d14	95.5	44.9-155		%REC	1	4/13/2005 1:59:00 PM

Lab ID: 0504037-83

Collection Date: 4/7/2005 1:42:00 PM

Client Sample ID: SS20-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	14600	267		µg/Kg	40	4/21/2005 12:54:00 PM
Surr: p-Terphenyl-d14	74.6	44.9-155		%REC	1	4/20/2005 3:59:00 PM

Lab ID: 0504037-84

Collection Date: 4/7/2005 1:50:00 PM

Client Sample ID: SS20-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	455	6.67		µg/Kg	1	4/21/2005 8:43:00 AM
Surr: p-Terphenyl-d14	90.5	44.9-155		%REC	1	4/21/2005 8:43:00 AM

Lab ID: 0504037-85

Collection Date: 4/7/2005 1:34:00 PM

Client Sample ID: SS20-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	317	6.67		µg/Kg	1	4/13/2005 2:31:00 PM
Surr: p-Terphenyl-d14	90.6	44.9-155		%REC	1	4/13/2005 2:31:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-86

Collection Date: 4/7/2005 1:44:00 PM

Client Sample ID: SS20-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	467	6.67		µg/Kg	1	4/21/2005 9:14:00 AM
Surr: p-Terphenyl-d14	91.2	44.9-155		%REC	1	4/21/2005 9:14:00 AM

Lab ID: 0504037-87

Collection Date: 4/7/2005 1:54:00 PM

Client Sample ID: SS20-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	485	6.67		µg/Kg	1	4/21/2005 9:46:00 AM
Surr: p-Terphenyl-d14	84.3	44.9-155		%REC	1	4/21/2005 9:46:00 AM

CLIENT: Maul, Foster & Alongi

Work Order: 0504037

Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13194	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319566	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND	1.00									

Sample ID	LCS-13194	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319567	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		48.1	1.00	50	0	96.2	91.3	111	0	0		

Sample ID	0504037-13AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319928	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		206.5	3.47	34.72	109	281	75.1	126	0	0		S

Sample ID	0504037-13AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319929	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		108.2	1.45	36.23	109	-2.08	75.1	126	206.5	62.5	20	S,R

Sample ID	0504037-13ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319569	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		75.32	0.833	0	0	0	0	0	109	36.5	20	R

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319574		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.34	1.00	50	0	98.7	90	110	0	0		
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319931		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.18	1.00	50	0	98.4	90	110	0	0		
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Sample ID	CCB-13194	SampType:	ICB	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319926	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	0.25	1.00	0	0	0	0	0	0	0		
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Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319565		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.93	1.00	50	0	99.9	90	110	0	0		
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Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319925		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	50.52	1.00	50	0	101	90	110	0	0		
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 8

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13193	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A			
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319661			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67										
Surr: p-Terphenyl-d14		6981		0	6667	0		105	44.9	155	0	0		

Sample ID	MB-13192	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B			
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319806			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67										
Surr: p-Terphenyl-d14		6807		0	6667	0		102	44.9	155	0	0		

Sample ID	MB-13205	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/14/2005	Run ID:	5973G_050414C			
Client ID:	ZZZZZ	Batch ID:	13205	TestNo:	8270SIM			Analysis Date:	4/15/2005	SeqNo:	319863			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67	0	0		0	0	0	0	0		
Surr: p-Terphenyl-d14		7733		0	6667	0		116	44.9	155	0	0		

Sample ID	MB-13228	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A			
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320785			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		2.667		6.67										J
Surr: p-Terphenyl-d14		7478		0	6667	0		112	44.9	155	0	0		

Sample ID	MB-13229	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A			
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320982			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67										
Surr: p-Terphenyl-d14		6033		0	6667	0		90.5	44.9	155	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13190	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			AnalysisDate:	4/12/2005	SeqNo:	321266
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Benzo(a)pyrene		ND		6.67							
Surr:p-Terphenyl-d14		6655		0	6667	0	99.8	44.9	155	0	0

Sample ID	LCS-13190	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			AnalysisDate:	4/12/2005	SeqNo:	319437
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Benzo(a)pyrene		162		6.67	166.7	0	97.2	37.7	137	0	0

Sample ID	LCS-13193	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			AnalysisDate:	4/13/2005	SeqNo:	319662
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Benzo(a)pyrene		146		6.67	166.7	0	87.6	37.7	137	0	0

Sample ID	LCS-13192	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			AnalysisDate:	4/14/2005	SeqNo:	319807
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Benzo(a)pyrene		178		6.67	166.7	0	107	37.7	137	0	0

Sample ID	LCS-13228	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			AnalysisDate:	4/19/2005	SeqNo:	320786
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Benzo(a)pyrene		162.7		6.67	166.7	2.667	96	37.7	137	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	LCS-13229	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320983	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		160.7	6.67	166.7	0	96.4	37.7	137	0	0		

Sample ID	0504037-17AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319556	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		283.3	33.3	166.7	150	80	64.6	110	0	0		

Sample ID	0504037-52AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319663	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		236.7	6.67	166.7	67.33	102	64.6	110	0	0		

Sample ID	0504037-47AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/15/2005	SeqNo:	319860	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		213.3	6.67	166.7	30	110	64.6	110	0	0		

Sample ID	0504037-05AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		282.7	6.67	166.7	108	105	64.6	110	0	0		

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		246	6.67	166.7	124	73.2	64.6	110	0	0		

Sample ID	0504037-17AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319557	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		296.7	33.3	166.7	150	88	64.6	110	283.3	4.60	20	

Sample ID	0504037-52AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319664	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		301.3	6.67	166.7	67.33	140	64.6	110	236.7	24.0	20	SR

Sample ID	0504037-47AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		185.3	6.67	166.7	30	93.2	64.6	110	213.3	14.0	20	

Sample ID	0504037-05AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320810	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		323.3	6.67	166.7	108	129	64.6	110	282.7	13.4	20	S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		221.3	6.67	166.7	124	58.4	64.6	110	246	10.6	20	S

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	319435	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		402	6.67	333.3	0	121	70	130	0	0		

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050413A	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319550	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		400.7	6.67	333.3	0	120	70	130	0	0		

Sample ID	CCV-13193	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_050413A	
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319660	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		148	6.67	133.3	0	111	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319805	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		72.67	6.67	66.67	0	109	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B			
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0		
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Sample ID	CCV-13205	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414C		
Client ID:	ZZZZZ	Batch ID:	13205	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319862		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0		
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Sample ID	CCV-13228	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050419A			
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320784			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	154.7	6.67	133.3	0	116	70	130	0	0		
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Sample ID	CCV-13228	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050419A		
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320791		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	164.7	6.67	133.3	0	124	70	130	0	0		
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Sample ID	CCV-13229	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050420A		
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320981		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	156.7	6.67	133.3	0	118	70	130	0	0		
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Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 8 of 8

CLIENT: Maul, Foster & Alongi

Work Order: 0504037

Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13194	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319566	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND	1.00									

Sample ID	LCS-13194	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319567	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		48.1	1.00	50	0	96.2	91.3	111	0	0		

Sample ID	0504037-13AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319928	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		206.5	3.47	34.72	109	281	75.1	126	0	0		S

Sample ID	0504037-13AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319929	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		108.2	1.45	36.23	109	-2.08	75.1	126	206.5	62.5	20	S,R

Sample ID	0504037-13ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319569	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		75.32	0.833	0	0	0	0	0	109	36.5	20	R

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050413B						
Client ID: ZZZZZ	Batch ID: 13194	TestNo: E6010		AnalysisDate: 4/13/2005	SeqNo: 319574						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.34	1.00	50	0	98.7	90	110	0	0		
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Sample ID: CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050414A						
Client ID: ZZZZZ	Batch ID: 13194	TestNo: E6010		Analysis Date: 4/14/2005	SeqNo: 319931						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.18	1.00	50	0	98.4	90	110	0	0		
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Sample ID	CCB-13194	SampType:	ICB	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319926	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	0.25	1.00	0	0	0	0	0	0	0		
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Sample ID	ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050413B					
Client ID:	ZZZZZ	Batch ID: 13194	TestNo: E6010		Analysis Date: 4/13/2005	SeqNo: 319565					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.93	1.00	50	0	99.9	90	110	0	0		
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Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319925		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	50.52	1.00	50	0	101	90	110	0	0		
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Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13193	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A			
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319661			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67									
Surr:p-Terphenyl-d14	6981	0	6667	0	105	44.9	155	0	0		

Sample ID	MB-13192	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B		
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319806		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67									
Surr:p-Terphenyl-d14	6807	0	6667	0	102	44.9	155	0	0		

Sample ID	MB-13205	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/14/2005	Run ID:	5973G_050414C		
Client ID:	ZZZZZ	Batch ID:	13205	TestNo:	8270SIM			Analysis Date:	4/15/2005	SeqNo:	319863		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67									
Surr:p-Terphenyl-d14	7733	0	6667	0	116	44.9	155	0	0		

Sample ID	MB-13228	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320785
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	2.667	6.67									J
Surr:p-Terphenyl-d14	7478	0	6667	0	112	44.9	155	0	0		

Sample ID	MB-13229	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A		
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320982		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67									
Surr:p-Terphenyl-d14	6033	0	6667	0	90.5	44.9	155	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13190	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	321266	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND	6.67									
Surr:p-Terphenyl-d14		6655	0	6667	0	99.8	44.9	155	0	0		

Sample ID	LCS-13190	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	319437	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162	6.67	166.7	0	97.2	37.7	137	0	0		

Sample ID	LCS-13193	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319662	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		146	6.67	166.7	0	87.6	37.7	137	0	0		

Sample ID	LCS-13192	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319807	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		178	6.67	166.7	0	107	37.7	137	0	0		

Sample ID	LCS-13228	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320786	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162.7	6.67	166.7	2.667	96	37.7	137	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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Page 4 of 8

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	LCS-13229	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320983	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		160.7	6.67	166.7	0	96.4	37.7	137	0	0		

Sample ID	0504037-17AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319556	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		283.3	33.3	166.7	150	80	64.6	110	0	0		

Sample ID	0504037-52AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319663	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		236.7	6.67	166.7	67.33	102	64.6	110	0	0		

Sample ID	0504037-47AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/15/2005	SeqNo:	319860	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		213.3	6.67	166.7	30	110	64.6	110	0	0		

Sample ID	0504037-05AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		282.7	6.67	166.7	108	105	64.6	110	0	0		

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		246	6.67	166.7	124	73.2	64.6	110	0	0		

Sample ID	0504037-17AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319557	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		296.7	33.3	166.7	150	88	64.6	110	283.3	4.60	20	

Sample ID	0504037-52AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319664	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		301.3	6.67	166.7	67.33	140	64.6	110	236.7	24.0	20	SR

Sample ID	0504037-47AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		185.3	6.67	166.7	30	93.2	64.6	110	213.3	14.0	20	

Sample ID	0504037-05AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320810	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		323.3	6.67	166.7	108	129	64.6	110	282.7	13.4	20	S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 8

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		221.3	6.67	166.7	124	58.4	64.6	110	246	10.6	20	S

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	319435	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		402	6.67	333.3	0	121	70	130	0	0		

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050413A	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319550	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		400.7	6.67	333.3	0	120	70	130	0	0		

Sample ID	CCV-13193	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_050413A	
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319660	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		148	6.67	133.3	0	111	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319805	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		72.67	6.67	66.67	0	109	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B		
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0					
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Sample ID	CCV-13205	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414C		
Client ID:	ZZZZZ	Batch ID:	13205	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319862		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0					
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Sample ID	CCV-13228	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050419A			
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320784			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	154.7	6.67	133.3	0	116	70	130	0	0					
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Sample ID: CCV-13228	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_050419A						
Client ID: ZZZZZ	Batch ID: 13228	TestNo: 8270SIM		Analysis Date: 4/19/2005	SeqNo: 320791						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	164.7	6.67	133.3	0	124	70	130	0	0					
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Sample ID	CCV-13229	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050420A			
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320981			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	156.7	6.67	133.3	0	118	70	130	0	0					
----------------	-------	------	-------	---	-----	----	-----	---	---	--	--	--	--	--

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

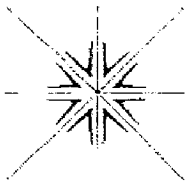
Page 8 of 8

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- 3C Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Page 1 of 1



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager: Anna St. John
Company: MFA
Address: 3121 SW Moody Ave, Ste 200
Portland, OR 97239
Phone: 971-544-2139 Fax: 971-544-2140
Project No. 0100.01.02 Project Name: AACP
Invoice To: _____ P.O. No. _____

Collected By: _____
Signature: Charles Wise
Printed: Charles Wise
Signature: _____
Printed: _____

Turn Around Time

☒ Normal

☐ Rush _____

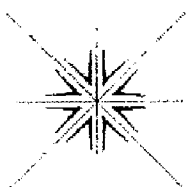
Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses												For Laboratory Use						
Date	Time	Sample I.D.	Matrix	No of Containers	1	2	3	4	5	6	7	8	9	10	11	12	Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?
04/08/05	10:15	SS7-0	S	1	X	X	X										0504037	Specialty		60 °C	Y/N	Y/N
	10:17	SS7-1																				
	10:19	SS7-2																				
	10:15	SS7-5-0																				
	10:21	SS7-10-0																				
	10:21	SS7-20-0																				
	10:17	SS7-5-1																				
	10:23	SS7-10-1																				
	10:29	SS7-20-1																				
	10:19	SS7-5-2																				
	10:25	SS7-10-2																				
✓	10:31	SS7-20-2																				
Relinquished By: <u>GW</u> Company: <u>MFA</u>			Date: <u>4-11-05</u>	Time: <u>12:20</u>	Received By: <u>Nikki Tietzen</u> Company: <u>Specialty</u>												Relinquished By: _____ Company: _____		Date: _____	Time: _____		
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.																	Received For Lab By: <u>Nikki Tietzen</u>		Date: <u>4-11-05</u>	Time: <u>1440</u>		
Copies: White-Original					Yellow-Project File					Pink-Customer Copy												

CHAIN OF CUSTODY RECORD

Page 2 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Hardy Ave, ste 200
Portland, OR
Phone 971-544-2139 Fax 971-544-2140
Project No. 900-01.02 Project Name AACP
Invoice To Scott B P.O. No. 1630

Collected By:

Signature Charles Wice
Printed Charles Wice

Signature _____
Printed _____

Turn Around Time

☒ Normal

☐ Rush _____

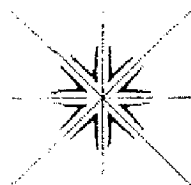
Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses												For Laboratory Use						
Date	Time	Sample I.D.	Matrix	No. of Containers	PCNCO (a) pyrene	Cu	Pb									Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?	
04/08/05	1200	SS9-0	S	1	X	X	X										0504037	Specialty		6 °C	Y/N	Y/N
		SS9-1																				
		SS9-2																				
	12/0	SS9-5-0	S	1	X	X	X															
		SS9-10-9																				
		SS9-20-0																				
		SS9-5-1																				
		SS9-10-1																				
		SS9-20-1																				
		SS9-5-2																				
		SS9-10-2																				
		SS9-20-2																				
Relinquished By: <u>CW</u>			Date	Time	Received By: <u>Nikki Tilton</u>			Relinquished By:			Date	Time										
Company: <u>MFA</u>			<u>4.11.05</u>	<u>12:20</u>	Company: <u>Specialty</u>			Company:														
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.												Received For Lab By:		Date	Time							
Copies: White-Original Yellow-Project File Pink-Customer Copy												<u>Nikki Tilton</u>		<u>4.11.05</u>	<u>1440</u>							

CHAIN OF CUSTODY RECORD

Page 3 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave. Ste. 200
Portland, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100-01-02 Project Name AACP
Invoice To Scott B. P.O. No. 1630

Collected By:

Signature Charles Wice

Printed Charles Wice

Signature _____

Printed _____

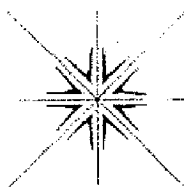
Turn Around Time

☒ Normal
☐ Rush

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses												For Laboratory Use						
Date	Time	Sample I.D.	Matrix	No. of Containers	Benedict's	Cu	Pb									Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?	
04/08/05	9:23	SS12-0	S	1	X	X	X										024034	Specialty		10 °C	Y/N	Y/N
	9:25	SS12-1 (DUPE)		2																		
	9:27	SS12-2		1																		
	9:40	SS12-5-0		1																		
	9:46	SS12-10-0		1																		
	9:52	SS12-20-0		1																		
	9:42	SS12-5-1		1																		
	9:48	SS12-10-1		1																		
	9:54	SS12-20-1		1																		
	9:44	SS12-5-2		1																		
	9:50	SS12-10-2		1																		
	9:56	SS12-20-2		1	Y	Y	Y															
Relinquished By: <u>CW</u>			Date	Time	Received By: <u>Nikki Tilton</u>			Relinquished By:			Date	Time										
Company: <u>MFA</u>			<u>4-11-05</u>	<u>1230</u>	Company: <u>Specialty</u>			Company: <u> </u>														
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.												Received For Lab By:		Date	Time							
Copies: White-Original				Yellow-Project File				Pink-Customer Copy				<u>Nikki Tilton</u>		<u>4-11-05</u>	<u>1440</u>							

Page 54 of 

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Company MFA

Address 3121 SW Moody Ave, Ste 200

Phone 971-544-2139 Fax 971-544-2140

Project No. 6100-01-02 Project Name AACD

Invoice To Scott B. P.O. No. 1630

Signature Charles G. ...

Printed Charles Wice

Signature.

Printed.

Turn Around Time

☒ Normal

☐ Rush

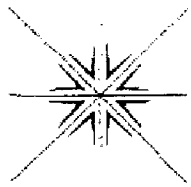
Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

Signature _____ Printed _____				Analyses										For Laboratory Use			
Turn Around Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush _____				No. of Containers	Benzol(a)pyrene	Cu	Pb									Lab Job No. <u>0504038</u>	Air Bill No. _____
Specify _____																Shipped Via <u>SPECIALTY</u>	Temperature On Receipt <u>60</u> °C
Rush Analyses Must Be Scheduled With The Lab In Advance																Comments	Lab I.D.
Date	Time	Sample I.D.	Matrix														
04/08/05	1045	SS15-0 SS15-0	S	1	X	X	X										-28
	1047	SS15-1 SS15-1		1													
	1049	SS15-2 SS15-2		1													
	1105	SS15-5-0 SS15-5-0		1													
	1111	SS15-10-0 SS15-10-0		1													
	1107	SS15-5-1 SS15-5-1		1													
	1113	SS15-10-1 SS15-10-1		1													
	1115	SS15-10-2 SS15-10-2	✓	1													
	1109	SS15-5-2 SS15-5-2	✓	1	✓	✓	✓										-36
		SS15-5-2	✓														
		SS15-5-2	✓														
		SS15-5-2	✓														
Relinquished By: <u>CW</u>			Date	Time	Received By: <u>Nikki Turm</u>			Relinquished By:			Date	Time					
Company: <u>MFA</u>			<u>4.11.05</u>	<u>1220</u>	Company: <u>Specialty</u>			Company: <u>?</u>									
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt. Copies: White-Original Yellow-Project File Pink-Customer Copy										Received For Lab By: <u>Nikki Tilton</u>		Date	Time				
												<u>4.11.05</u>	<u>1440</u>				

CHAIN OF CUSTODY RECORD

Page 45 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
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Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave, Ste 200
Portland, OR 97239
Phone 971-540-2134 Fax 971-544-2140
Project No. 0100-0102 Project Name AACP
Invoice To Scott B P.O. No. 1630

Collected By:
Signature Charles Wice
Printed Charles Wice

Signature _____
Printed _____

Turn Around Time

☒ Normal

☐ Rush

Specify

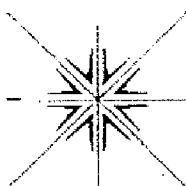
Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses										For Laboratory Use	
					Benzol(a)pyrene	Cu	Pb								Lab Job No	Air Bill No.
04/07/05	1440	SS16-0	S	1	X	X	X								0504039	
	1442	SS16-1		1											Specialty	
	1444	SS16-2		1												
	1450	SS16-5-0		1												
	1456	SS16-10-0		1												
	1502	SS16-20-0		1												
	1452	SS16-5-1		1												
	1458	SS16-10-1		1												
	1504	SS16-20-1		1												
	1444	SS16-5-2 (DUE)		2											* PU name duplicated	-46-47
	1500	SS16-10-2		1											Sample as:	
	1506	SS16-20-2	V	1	V	V	V								SS16-5-2-D	-49

Relinquished By: <u>W</u> Company: <u>MFA</u>	Date: <u>4-11-05</u> Time: <u>1220</u>	Received By: <u>Nikki Tilton</u> Company: <u>Specialty</u>	Relinquished By: _____ Company: _____	Date: _____ Time: _____
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt. Copies: White-Original Yellow-Project File Pink-Customer Copy			Received For Lab By: <u>Nikki Tilton</u>	Date: <u>4-11-05</u> Time: <u>1440</u>

CHAIN OF CUSTODY RECORD

Page 6 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John

Company MFA

Address 3121 SW Moody Ave., Ste 200
Portland, OR 97239

Phone 971-544-2139 Fax 971-544-2140

Project No. 0160.01.02 Project Name AACP

Invoice To Scott B. P.O. No. 1630

Collected By:

Signature Charles Wice

Printed Charles Wice

Signature _____

Printed _____

Turn Around Time

☒ Normal

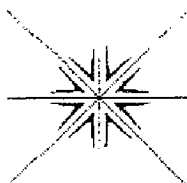
☐ Rush _____

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses										For Laboratory Use							
Date	Time	Sample I.D.	Matrix	No. of Containers	Berried (a) pyrene	Cu	Pb								Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?	
04/07/05	10:50	SS17-0	S	1	X											0504031	Specialty		6 °C	Y/N	Y/N
	10:52	SS17-1 (DUPE)	S	2																	
	10:54	SS17-2		1																	
	11:05	SS17-5-0		1																	
	11:15	SS17-10-0		1																	
	11:09	SS17-20-0		1																	
	11:25	SS17-5-1		1																	
	11:17	SS17-10-1		1																	
	11:27	SS17-20-1		1																	
	11:09	SS17-5-2		1																	
	11:19	SS17-10-2		1																	
	11:29	SS17-20-2		1																	
Relinquished By: <u>CW</u>			Date	Time	Received By: <u>Nikki Tilton</u>			Relinquished By:			Date	Time									
Company: <u>MFA</u>			<u>4-11-05</u>	<u>1220</u>	Company: <u>Specialty</u>			Company: <u>7</u>													
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.										Received For Lab By:		Date	Time								
Copies: White-Original Yellow-Project File Pink-Customer Copy										<u>Nikki Tilton</u>		<u>4-11-05</u>	<u>1442</u>								

Page 47 of 47



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Contact Person/Project Manager Anna St John
Company MFA
Address 3121 SW Moody Ave., Ste. 200
Portland, Oregon 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100.01.02 Project Name AACP
Invoice To Scott Burgess P.O. No. 1630

Collected By: _____
Signature: Charles Wice
Printed: Charles Wice

Signature _____
Printed _____

Turn Around Time

g) Normal

☐ Rush

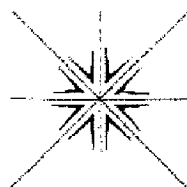
Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

Signature _____ Printed _____				Analyses												For Laboratory Use			
Turn Around Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush _____ Specify _____				No. of Containers	Benzol(a)pyrene	Cu	Pb										Lab Job No. <u>0504037</u>	Shipped Via <u>Specialty</u>	Air Bill No. _____
Rush Analyses Must Be Scheduled With The Lab In Advance																	Temperature On Receipt <u>6</u> °C	Specialty Analytical Containers? Y / N	Specialty Analytical Trip Blanks? Y / N
Date	Time	Sample I.D.	Matrix														Comments	Lab I.D.	
04/07/05	10 00	SS18-0	S	1	X	X	X											-63	
	10 02	SS18-1	S																
	10 04	SS18-2	S																
	10 10	SS18-5-0	S																
	10 10	SS18-10-0	S																
	10 15	SS18-20-0	S																
	10 12	SS18-5-1	S																
	10 22	SS18-10-1 (DUPE)	S	2													* Name duplicate sample as: SS18-10-1-D	-71	
	10 24	SS18-20-1	S																
	10 14	SS18-5-2	S																
	10 27	SS18-10-2	S																
	10 29	SS18-20-2	S															-75	
Relinquished By: <u>CU</u> Company: <u>MFA</u>			Date: <u>4-11-05</u> Time: <u>1220</u>	Received By: <u>Nicki Tilton</u> Company: <u>Specialty</u>			Relinquished By: _____ Company: _____			Date: _____ Time: _____			Received For Lab By: <u>Nicki Tilton</u> <u>4-11-05 1440</u>			Date: _____ Time: _____			
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.																			
Copies: White-Original			Yellow-Project File			Pink-Customer Copy													

CHAIN OF CUSTODY RECORD

Page 28 of



Specialty Analytical

19761 S.W. 95th Place
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Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave. Ste 200
Portland, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100-01.02 Project Name AACP
Invoice To Scott B. P.O. No. 1630

Collected By: Charlie Wiew
Signature Charlie Wiew
Printed Charlie Wiew

Signature _____
Printed _____

Turn Around Time

☒ Normal

☐ Rush

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

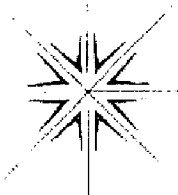
				No of Containers	Analyses										For Laboratory Use		
Date	Time	Sample I.D.	Matrix												Lab Job No.	Shipped Via	Air Bill No.
64/07/05	1300	SS20-0	S	1	X	X	X								0504039	Specialty	
	1302	SS20-1															
	1305	SS20-2															
	1330	SS20-5-0															
	1340	SS20-10-0															
	1350	SS20-20-0															
	1332	SS20-5-1															
	1342	SS20-10-1															
	1352	SS20-20-1															
	1334	SS20-5-2															
	1344	SS20-10-2															
V	1354	SS20-20-2															-89

Relinquished By: <u>CW</u>	Date: <u>4/11/05</u>	Time: <u>1320</u>	Received By: <u>Nikki Tilton</u>	Relinquished By: <u> </u>	Date: <u> </u>	Time: <u> </u>
Company: <u>MFA</u>			Company: <u>Specialty</u>	Company: <u> </u>		

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt

Copies: White-Original Yellow-Project File Pink-Customer Copy

Received For Lab By: <u>Nikki Tilton</u>	Date: <u>4-11-05</u>	Time: <u>1440</u>
------------------------------------------	----------------------	-------------------



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

April 21, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0504038

Specialty Analytical received 13 samples on 4/11/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID: 0504038-01 Collection Date: 4/7/2005 2:00:00 PM
Client Sample ID: SS21-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
E6010						
Lead	107	1.61		mg/Kg	1	Analyst: das 4/13/2005 2:44:16 PM
PAH'S BY GC/MS-OARSIM						
8270SIM						
Benzo(a)pyrene	123	6.67		µg/Kg	1	Analyst: bda 4/13/2005 3:02:00 PM
Surr: p-Terphenyl-d14	94.1	44.9-155		%REC	1	4/13/2005 3:02:00 PM

Lab ID: 0504038-02 Collection Date: 4/7/2005 2:02:00 PM
Client Sample ID: SS21-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
E6010						
Lead	5.88	1.67		mg/Kg	1	Analyst: das 4/13/2005 2:49:55 PM
PAH'S BY GC/MS-OARSIM						
8270SIM						
Benzo(a)pyrene	532	6.67		µg/Kg	1	Analyst: bda 4/13/2005 3:33:00 PM
Surr: p-Terphenyl-d14	91.0	44.9-155		%REC	1	4/13/2005 3:33:00 PM

Lab ID: 0504038-03 Collection Date: 4/7/2005 2:04:00 PM
Client Sample ID: SS21-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
E6010						
Lead	7.06	1.47		mg/Kg	1	Analyst: das 4/13/2005 2:55:11 PM
PAH'S BY GC/MS-OARSIM						
8270SIM						
Benzo(a)pyrene	703	6.67		µg/Kg	1	Analyst: bda 4/13/2005 4:04:00 PM
Surr: p-Terphenyl-d14	90.1	44.9-155		%REC	1	4/13/2005 4:04:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID: 0504038-04

Collection Date: 4/7/2005 2:10:00 PM

Client Sample ID: SS21-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: das
Lead	111	1.67		mg/Kg	1	4/13/2005 3:00:28 PM
PAH'S BY GC/MS-OARSIM						
		8270SIM				Analyst: bda
Benzo(a)pyrene	178	6.67		µg/Kg	1	4/13/2005 4:35:00 PM
Surr: p-Terphenyl-d14	91.3	44.9-155		%REC	1	4/13/2005 4:35:00 PM

Lab ID: 0504038-05

Collection Date: 4/7/2005 2:10:00 PM

Client Sample ID: SS21-5-0-D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: das
Lead	85.3	1.67		mg/Kg	1	4/13/2005 3:05:56 PM
PAH'S BY GC/MS-OARSIM						
		8270SIM				Analyst: bda
Benzo(a)pyrene	183	6.67		µg/Kg	1	4/13/2005 5:06:00 PM
Surr: p-Terphenyl-d14	88.2	44.9-155		%REC	1	4/13/2005 5:06:00 PM

Lab ID: 0504038-06

Collection Date: 4/7/2005 2:15:00 PM

Client Sample ID: SS21-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: das
Lead	59.5	1.69		mg/Kg	1	4/19/2005 3:50:23 PM
PAH'S BY GC/MS-OARSIM						
		8270SIM				Analyst: bda
Benzo(a)pyrene	143	6.67		µg/Kg	1	4/21/2005 10:17:00 AM
Surr: p-Terphenyl-d14	79.0	44.9-155		%REC	1	4/21/2005 10:17:00 AM

Lab ID: 0504038-07

Collection Date: 4/7/2005 2:21:00 PM

Client Sample ID: SS21-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST						
		PER CLIENT				Analyst: ADM
Hold	HOLD				1	4/20/2005

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID: 0504038-08

Collection Date: 4/7/2005 2:12:00 PM

Client Sample ID: SS21-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Lead	3.73	1.56		mg/Kg	1	4/13/2005 3:11:24 PM
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	1580	13.3		µg/Kg	2	4/14/2005 9:40:00 AM
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Surr: p-Terphenyl-d14	85.9	44.9-155		%REC	1	4/13/2005 5:38:00 PM
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Lab ID: 0504038-09

Collection Date: 4/7/2005 2:17:00 PM

Client Sample ID: SS21-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Lead	4.52	1.61		mg/Kg	1	4/19/2005 4:24:06 PM
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	455	6.67		µg/Kg	1	4/21/2005 10:49:00 AM
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Surr: p-Terphenyl-d14	89.1	44.9-155		%REC	1	4/21/2005 10:49:00 AM
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Lab ID: 0504038-10

Collection Date: 4/7/2005 2:23:00 PM

Client Sample ID: SS21-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Lead	30.2	1.72		mg/Kg	1	4/19/2005 4:29:23 PM
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	327	6.67		µg/Kg	1	4/21/2005 11:20:00 AM
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Surr: p-Terphenyl-d14	91.2	44.9-155		%REC	1	4/21/2005 11:20:00 AM
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Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID: 0504038-11

Collection Date: 4/7/2005 2:14:00 PM

Client Sample ID: SS21-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Lead	9.48	1.61		mg/Kg	1	4/13/2005 3:16:54 PM
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	1330	6.67		µg/Kg	1	4/13/2005 6:09:00 PM
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Surr: p-Terphenyl-d14	83.4	44.9-155		%REC	1	4/13/2005 6:09:00 PM
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Lab ID: 0504038-12

Collection Date: 4/7/2005 2:19:00 PM

Client Sample ID: SS21-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Lead	9.20	1.79		mg/Kg	1	4/19/2005 4:50:47 PM
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	749	6.67		µg/Kg	1	4/21/2005 11:51:00 AM
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Surr: p-Terphenyl-d14	97.2	44.9-155		%REC	1	4/21/2005 11:51:00 AM
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Lab ID: 0504038-13

Collection Date: 4/7/2005 2:25:00 PM

Client Sample ID: SS21-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP

E6010

Analyst: das

Lead	6.52	1.69		mg/Kg	1	4/19/2005 4:56:02 PM
------	------	------	--	-------	---	----------------------

PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	481	6.67		µg/Kg	1	4/21/2005 12:23:00 PM
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Surr: p-Terphenyl-d14	81.8	44.9-155		%REC	1	4/21/2005 12:23:00 PM
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CLIENT: Maul, Foster & Alongi

Work Order: 0504038

Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13194	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319566	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND	1.00									

Sample ID	MBLK-13232	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050419A	
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320813	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		ND	2.00									

Sample ID	LCS-13194	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319567	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		48.1	1.00	50	0	96.2	91.3	111	0	0		

Sample ID	LCS-13232	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050419A	
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320814	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		99.5	2.00	100	0	99.5	84.9	109	0	0		

Sample ID	0504037-13AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319928	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		206.5	3.47	34.72	109	281	75.1	126	0	0		S

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0504038-06AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050419A	
Client ID:	SS21-10-0	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320817	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		158.8	1.56	78.12	59.53	127	84.9	109	0	0		S,RP

Sample ID	0504038-06AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050420A	
Client ID:	SS21-10-0	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/20/2005	SeqNo:	320888	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		160.1	15.6	78.12	51.95	138	84.9	109	0	0		S

Sample ID	0504037-13AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319929	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		108.2	1.45	36.23	109	-2.08	75.1	126	206.5	62.5	20	S,R

Sample ID	0504038-06AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050419A	
Client ID:	SS21-10-0	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320818	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		134.4	1.79	89.29	59.53	83.8	84.9	109	0	0		S,RP

Sample ID	0504038-06AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050420A	
Client ID:	SS21-10-0	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/20/2005	SeqNo:	320889	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		129.2	17.9	89.29	51.95	86.5	84.9	109	167.2	25.6	20	R

Sample ID	0504037-13ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319569	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 7

CLIENT: Maul, Foster & Alongi
Work Order: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0504037-13ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319569	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		75.32	0.833	0	0	0	0	0	109	36.5	20	R

Sample ID	0504038-06ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050419A	
Client ID:	SS21-10-0	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320816	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		74.74	1.75	0	0	0	0	0	59.53	22.6	20	R

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319574	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		49.34	1.00	50	0	98.7	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319931	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		49.18	1.00	50	0	98.4	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A	
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320823	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		102.4	2.00	100	0	102	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A	
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320830	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320830		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		100.8		2.00	100	0	101	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050420A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/20/2005	SeqNo:	320891		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		101.4		2.00	100	0	101	90	110	0	0		

Sample ID	CCB-13194	SampType:	ICB	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319926		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		0.25		1.00	0	0	0	0	0	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319565		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		49.93		1.00	50	0	99.9	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319925		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		50.52		1.00	50	0	101	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320812		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 4 of 7

CLIENT: Maul, Foster & Alongi
Work Order: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320812		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		102.2		2.00	100	0	102	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050420A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			AnalysisDate:	4/20/2005	SeqNo:	320884		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		101.8		2.00	100	0	102	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 7

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13193	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	RunID:	5973P_050413A		
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			AnalysisDate:	4/13/2005	SeqNo:	319661		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67											
Surr: p-Terphenyl-d14	6981	0	6667	0	105	44.9	155	0	0				

Sample ID	MB-13229	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A		
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320982		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67											
Surr: p-Terphenyl-d14	6033	0	6667	0	90.5	44.9	155	0	0				

Sample ID	LCS-13193	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A		
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319662		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	146	6.67	166.7	0	87.6	37.7	137	0	0				
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Sample ID	LCS-13229	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A		
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320983		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	160.7	6.67	166.7	0	96.4	37.7	137	0	0				
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Sample ID	0504037-52AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A		
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			AnalysisDate:	4/13/2005	SeqNo:	319663		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	236.7	6.67	166.7	67.33	102	64.6	110	0	0				
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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 7

CLIENT: Maul, Foster & Alongi
Work Order: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A			
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		246		6.67	166.7	124		73.2	64.6	110	0	0		

Sample ID	0504037-52AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A			
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319664			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		301.3		6.67	166.7	67.33		140	64.6	110	236.7	24.0	20	SR

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A			
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		221.3		6.67	166.7	124		58.4	64.6	110	246	10.6	20	S

Sample ID	CCV-13193	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_050413A			
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319660			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		148		6.67	133.3	0		111	70	130	0	0		

Sample ID	CCV-13229	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050420A			
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320981			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		156.7		6.67	133.3	0		118	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

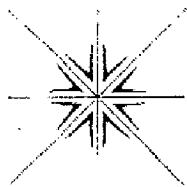
B - Analyte detected in the associated Method Blank

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- < Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Page 8 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave., Ste. 200
Portland, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100.01.02 Project Name AACP
Invoice To Scott B. P.O. No. 1630

Collected By: Charles Wice
Signature Charles Wice
Printed Charles Wice

Signature _____
Printed _____

Turn Around Time

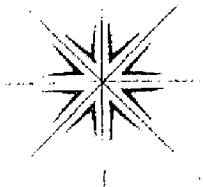
☒ Normal

☐ Rush

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses												For Laboratory Use				
				No. of Containers	Benz(a)pyrene	Cu	Pb											Lab Job No. <u>0504038</u>	Shipped Via <u>SPECIALTY</u>	Air Bill No. _____
Date	Time	Sample I.D.	Matrix																	
04/07/05	1400	SS21-0	S		X	X	X													
	1402	SS21-1																		
	1404	SS21-2																		
	1410	SS21-5-0 (DUP)															* PLS name duplicated sample as: SS21-5-0-D	-911-92		
	1415	SS21-10-0																		
	1421	SS21-20-0																		
	1412	SS21-5-1																		
	1417	SS21-10-1																		
	1423	SS21-20-1																		
	1414	SS21-5-2																		
	1419	SS21-10-2																		
	1425	SS21-20-2																-100		
Relinquished By: <u>CW</u>				Date	Time	Received By: <u>Mikki Tilton</u>				Relinquished By:				Date	Time					
Company <u>MFA</u>				<u>4/11/05</u>	<u>1326</u>	Company <u>SPECIALTY</u>				Company										
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt												Received For Lab By: <u>Mikki Tilton</u>				Date	Time			
Copies: White-Original Yellow-Project File Pink-Customer Copy																<u>4/11/05</u>	<u>1440</u>			



Specialty Analytical

10761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

April 27, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL.: (971) 544-2139
FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0504089

Specialty Analytical received 3 samples on 4/22/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

Specialty Analytical

Date: 27-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0504089**Lab ID:** 0504089-01**Collection Date:** 4/22/2005 10:50:00 AM**Client Sample ID:** SS15-20-0**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	1150	6.67		µg/Kg	1	4/26/2005 10:07:00 AM
Surr: p-Terphenyl-d14	109	44.9-155		%REC	1	4/26/2005 10:07:00 AM

Lab ID: 0504089-02**Collection Date:** 4/22/2005 10:55:00 AM**Client Sample ID:** SS15-20-1**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	203	6.67		µg/Kg	1	4/25/2005 5:26:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/25/2005 5:26:00 PM

Lab ID: 0504089-03**Collection Date:** 4/22/2005 11:20:00 AM**Client Sample ID:** SS15-20-1.7**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	191	13.3		µg/Kg	1	4/25/2005 5:57:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/25/2005 5:57:00 PM

CLIENT: Maul, Foster & Alongi
Work Order: 0504089
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT**TestCode: PAHLL_S**

Sample ID	MB-13269	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A		
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321624		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67									
Surr:p-Terphenyl-d14		6956		0	6667	0	104	44.9	155	0	0		

Sample ID	LCS-13269	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A		
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321625		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		168.7		6.67	166.7	0	101	37.7	137	0	0		

Sample ID	0504089-01AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A		
Client ID:	SS15-20-0	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321715		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		1317		33.3	166.7	1223	56.4	64.6	110	0	0		S,MC

Sample ID	0504089-01AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A		
Client ID:	SS15-20-0	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321716		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		1443		33.3	166.7	1223	132	64.6	110	0	0	20	S,MC

Sample ID	CCV-13269	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050425A		
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321623		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		157.3		6.67	133.3	0	118	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504089
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-13269	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050425A		
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321712		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162.7		6.67	133.3	0	122	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

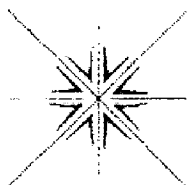
B - Analyte detected in the associated Method Blank

Page 2 of 2

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page 1 of 1

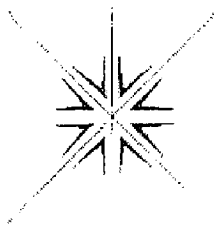


19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Invoice To Scott Burgess P.O. No. 0100.01.02

Rush Analyses Must Be Scheduled With The Lab In Advance

[illegible]



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

June 06, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0505158

Specialty Analytical received 32 samples on 5/27/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-01 Collection Date: 5/24/2005 9:56:00 AM
Client Sample ID: SS17-50-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	88.0	6.67		µg/Kg	1	6/1/2005 1:27:00 PM
Surr: p-Terphenyl-d14	115	44.9-155		%REC	1	6/1/2005 1:27:00 PM

Lab ID: 0505158-02 Collection Date: 5/24/2005 9:57:00 AM
Client Sample ID: SS17-50-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	43.3	6.67		µg/Kg	1	6/1/2005 1:58:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	6/1/2005 1:58:00 PM

Lab ID: 0505158-03 Collection Date: 5/24/2005 10:05:00 AM
Client Sample ID: SS17-40-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	50.0	6.67		µg/Kg	1	6/1/2005 2:30:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	6/1/2005 2:30:00 PM

Lab ID: 0505158-04 Collection Date: 5/24/2005 10:06:00 AM
Client Sample ID: SS17-40-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	311	6.67		µg/Kg	1	6/1/2005 3:01:00 PM
Surr: p-Terphenyl-d14	126	44.9-155		%REC	1	6/1/2005 3:01:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-05

Collection Date: 5/24/2005 10:10:00 AM

Client Sample ID: SS17-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	21.3	6.67		µg/Kg	1	6/1/2005 4:55:00 PM
Surr: p-Terphenyl-d14	125	44.9-155		%REC	1	6/1/2005 4:55:00 PM

Lab ID: 0505158-06

Collection Date: 5/24/2005 10:11:00 AM

Client Sample ID: SS17-30-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	86.7	6.67		µg/Kg	1	6/1/2005 5:26:00 PM
Surr: p-Terphenyl-d14	113	44.9-155		%REC	1	6/1/2005 5:26:00 PM

Lab ID: 0505158-07

Collection Date: 5/24/2005 10:17:00 AM

Client Sample ID: SS18-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	118	6.67		µg/Kg	1	6/1/2005 5:58:00 PM
Surr: p-Terphenyl-d14	116	44.9-155		%REC	1	6/1/2005 5:58:00 PM

Lab ID: 0505158-08

Collection Date: 5/24/2005 10:22:00 AM

Client Sample ID: SS18-40-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	318	6.67		µg/Kg	1	6/1/2005 6:29:00 PM
Surr: p-Terphenyl-d14	130	44.9-155		%REC	1	6/1/2005 6:29:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-09

Collection Date: 5/24/2005 10:30:00 AM

Client Sample ID: SS18-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM (8270C)

8270SIM

Analyst: bda

Benzo(a)pyrene	42.7	6.67		µg/Kg	1	6/1/2005 7:01:00 PM
Surr: p-Terphenyl-d14	126	44.9-155		%REC	1	6/1/2005 7:01:00 PM

Lab ID: 0505158-10

Collection Date: 5/24/2005 11:25:00 AM

Client Sample ID: SS20-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM (8270C)

8270SIM

Analyst: bda

Benzo(a)pyrene	317	6.67		µg/Kg	1	6/1/2005 7:32:00 PM
Surr: p-Terphenyl-d14	106	44.9-155		%REC	1	6/1/2005 7:32:00 PM

Lab ID: 0505158-11

Collection Date: 5/24/2005 11:30:00 AM

Client Sample ID: SS20-40-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM (8270C)

8270SIM

Analyst: bda

Benzo(a)pyrene	135	6.67		µg/Kg	1	6/1/2005 8:04:00 PM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	6/1/2005 8:04:00 PM

Lab ID: 0505158-12

Collection Date: 5/24/2005 11:35:00 AM

Client Sample ID: SS20-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM (8270C)

8270SIM

Analyst: bda

Benzo(a)pyrene	81.3	6.67		µg/Kg	1	6/1/2005 8:35:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	6/1/2005 8:35:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-13

Collection Date: 5/24/2005 1:03:00 PM

Client Sample ID: SS21-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	950	6.67		µg/Kg	1	6/1/2005 9:07:00 PM
Surr: p-Terphenyl-d14	118	44.9-155		%REC	1	6/1/2005 9:07:00 PM

Lab ID: 0505158-14

Collection Date: 5/24/2005 1:06:00 PM

Client Sample ID: SS21-40-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	145	6.67		µg/Kg	1	6/1/2005 9:38:00 PM
Surr: p-Terphenyl-d14	106	44.9-155		%REC	1	6/1/2005 9:38:00 PM

Lab ID: 0505158-15

Collection Date: 5/24/2005 1:10:00 PM

Client Sample ID: SS21-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	447	6.67		µg/Kg	1	6/1/2005 10:10:00 PM
Surr: p-Terphenyl-d14	120	44.9-155		%REC	1	6/1/2005 10:10:00 PM

Lab ID: 0505158-16

Collection Date: 5/24/2005 2:13:00 PM

Client Sample ID: SS16-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	528	6.67		µg/Kg	1	6/1/2005 10:41:00 PM
Surr: p-Terphenyl-d14	128	44.9-155		%REC	1	6/1/2005 10:41:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-17

Collection Date: 5/24/2005 2:20:00 PM

Client Sample ID: SS16-40-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	358	6.67		µg/Kg	1	6/1/2005 11:12:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	6/1/2005 11:12:00 PM

Lab ID: 0505158-18

Collection Date: 5/24/2005 2:27:00 PM

Client Sample ID: SS16-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	225	6.67		µg/Kg	1	6/1/2005 11:44:00 PM
Surr: p-Terphenyl-d14	127	44.9-155		%REC	1	6/1/2005 11:44:00 PM

Lab ID: 0505158-19

Collection Date: 5/25/2005 9:05:00 AM

Client Sample ID: SS12-50-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	365	6.67		µg/Kg	1	6/2/2005 12:15:00 AM
Surr: p-Terphenyl-d14	118	44.9-155		%REC	1	6/2/2005 12:15:00 AM

Lab ID: 0505158-20

Collection Date: 5/25/2005 9:10:00 AM

Client Sample ID: SS12-40-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	132	6.67		µg/Kg	1	6/2/2005 12:47:00 AM
Surr: p-Terphenyl-d14	126	44.9-155		%REC	1	6/2/2005 12:47:00 AM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-21

Collection Date: 5/25/2005 9:17:00 AM

Client Sample ID: SS12-30-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	262	6.67		µg/Kg	1	6/2/2005 10:43:00 AM
Surr: p-Terphenyl-d14	132	44.9-155		%REC	1	6/2/2005 10:43:00 AM

Lab ID: 0505158-22

Collection Date: 5/25/2005 9:40:00 AM

Client Sample ID: SS7-50-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	38.7	6.67		µg/Kg	1	6/2/2005 3:25:00 PM
Surr: p-Terphenyl-d14	120	44.9-155		%REC	1	6/2/2005 3:25:00 PM

Lab ID: 0505158-23

Collection Date: 5/25/2005 9:48:00 AM

Client Sample ID: SS7-40-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	40.0	33.3		µg/Kg	5	6/3/2005 9:09:00 AM
Surr: p-Terphenyl-d14	91.1	44.9-155		%REC	5	6/3/2005 9:09:00 AM

Lab ID: 0505158-24

Collection Date: 5/25/2005 9:55:00 AM

Client Sample ID: SS7-30-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	74.7	6.67		µg/Kg	1	6/2/2005 4:28:00 PM
Surr: p-Terphenyl-d14	136	44.9-155		%REC	1	6/2/2005 4:28:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-25

Collection Date: 5/25/2005 9:41:00 AM

Client Sample ID: SS7-50-1D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	14.7	6.67		µg/Kg	1	6/2/2005 11:14:00 AM
Surr: p-Terphenyl-d14	133	44.9-155		%REC	1	6/2/2005 11:14:00 AM

Lab ID: 0505158-26

Collection Date: 5/25/2005 10:48:00 AM

Client Sample ID: SS15-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	37.3	6.67		µg/Kg	1	6/2/2005 11:46:00 AM
Surr: p-Terphenyl-d14	125	44.9-155		%REC	1	6/2/2005 11:46:00 AM

Lab ID: 0505158-27

Collection Date: 5/25/2005 10:59:00 AM

Client Sample ID: SS15-40-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	325	6.67		µg/Kg	1	6/2/2005 12:17:00 PM
Surr: p-Terphenyl-d14	134	44.9-155		%REC	1	6/2/2005 12:17:00 PM

Lab ID: 0505158-28

Collection Date: 5/25/2005 11:10:00 AM

Client Sample ID: SS15-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	88.7	6.67		µg/Kg	1	6/2/2005 12:48:00 PM
Surr: p-Terphenyl-d14	144	44.9-155		%REC	1	6/2/2005 12:48:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-29

Collection Date: 5/25/2005 10:50:00 AM

Client Sample ID: SS15-50-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	39.3	6.67		µg/Kg	1	6/2/2005 1:20:00 PM
Surr: p-Terphenyl-d14	131	44.9-155		%REC	1	6/2/2005 1:20:00 PM

Lab ID: 0505158-30

Collection Date: 5/25/2005 11:00:00 AM

Client Sample ID: SS15-40-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	36.0	6.67		µg/Kg	1	6/2/2005 1:51:00 PM
Surr: p-Terphenyl-d14	123	44.9-155		%REC	1	6/2/2005 1:51:00 PM

Lab ID: 0505158-31

Collection Date: 5/25/2005 11:11:00 AM

Client Sample ID: SS15-30-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	30.7	6.67		µg/Kg	1	6/2/2005 2:23:00 PM
Surr: p-Terphenyl-d14	131	44.9-155		%REC	1	6/2/2005 2:23:00 PM

Lab ID: 0505158-32

Collection Date: 5/25/2005 11:12:00 AM

Client Sample ID: SS15-30-2D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	4250	33.3		µg/Kg	5	6/2/2005 5:00:00 PM
Surr: p-Terphenyl-d14	116	44.9-155		%REC	1	6/2/2005 2:54:00 PM

CLIENT: Maul, Foster & Alongi
 Work Order: 0505158
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13503	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A		
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330222		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67									
Surr: p-Terphenyl-d14		8075		0	6667	0	121	44.9	155	0	0		

Sample ID	MB-13504	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A		
Client ID:	ZZZZZ	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330628		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67									
Surr: p-Terphenyl-d14		7071		0	6667	0	106	44.9	155	0	0		

Sample ID	LCS-13503	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A		
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330223		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		124		6.67	166.7	0	74.4	37.7	137	0	0		

Sample ID	LCS-13504	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A		
Client ID:	ZZZZZ	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330629		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		150		6.67	166.7	0	90	37.7	137	0	0		

Sample ID	0505158-01AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A		
Client ID:	SS17-50-2	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330224		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		184.7		6.67	166.7	88	58	64.6	110	0	0		S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0505158
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0505158-21AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A	
Client ID:	SS12-30-1	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330631	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		258.7	6.67	166.7	262	-2	64.6	110	0	0		S

Sample ID	0505158-01AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A	
Client ID:	SS17-50-2	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330225	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		276.7	6.67	166.7	88	113	64.6	110	184.7	39.9	20	SR

Sample ID	0505158-21AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A	
Client ID:	SS12-30-1	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330632	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		276	6.67	166.7	262	8.4	64.6	110	258.7	6.48	20	S

Sample ID	CCV-13503	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050601A	
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330221	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		139.3	6.67	133.3	0	104	70	130	0	0		

Sample ID	CCV-13503	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050601A	
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330230	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		160.7	6.67	133.3	0	120	70	130	0	0		

Sample ID	CCV-13504	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050602A	
Client ID:	ZZZZZ	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330627	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 3

CLIENT: Maul, Foster & Alongi
Work Order: 0505158
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-13504	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_050602A					
Client ID:	ZZZZZ	Batch ID: 13504	TestNo: 8270SIM		AnalysisDate: 6/2/2005	SeqNo: 330627					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	165.3	6.67	133.3	0	124	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

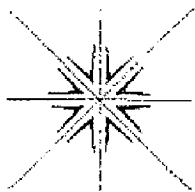
Page 3 of 3

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- M1 Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Page 1 of 3



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Aimee St John

Company MFA

Address 7223 NE Hazel Dell Ave.

Phone 360 694-2691

Fax 360 906 1958

Project No. 0106-01-02

Project Name AACA

Invoice To _____

P.O. No. _____

Collected By:

Signature _____

Printed _____

Signature _____

Printed _____

Turn Around Time

☒ Normal

☐ Rush _____

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

No. of Containers

Analyses

For Laboratory Use

Lab Job No. 0505158

Shipped Via Specialty

Air Bill No. _____

Temperature On Receipt 18 °C

Specialty Analytical Containers? Y/N

Specialty Analytical Trip Blanks? Y/N

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses	Comments	Lab I.D.
05/24/05	9:56	SS17-50-2	S	1	X		
	9:57	SS17-50-1					
	10:05	SS17-40-2					
	10:06	SS17-40-1					
	10:10	SS17-10-2					
	10:11	SS17-30-1					
	10:17	SS18-50-2					
	10:22	SS18-40-2					
	10:30	SS18-30-2					
	11:25	SS20-50-2					
	11:30	SS20-40-2					
	11:35	SS20-30-2					

Relinquished By:

Company:

Date

Time

Received By:

Company:

Relinquished By:

Company:

Date

Time

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.

Copies: White-Original

Yellow-Project File

Pink-Customer Copy

Received For Lab By:

Nikki Sifton

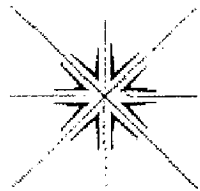
Date

Time

5/27/05 9:15

CHAIN OF CUSTODY RECORD

Page 2 of 3



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St John

Company MFA

Address 7223 NE Mary Dell Ave

Phone 360 614 2691 Fax 360 4906 1958

Project No. 0100-01 02 Project Name AACP

Invoice To _____ P.O. No. _____

Collected By:

Signature Charles Wice

Printed Charles Wice

Signature _____

Printed _____

Turn Around Time

☒ Normal

☐ Rush _____

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

No. of Containers		Analyses										For Laboratory Use			
Date	Time	Sample I.D.	Matrix	1	2	3	4	5	6	7	8	9	10	Comments	Lab I.D.
05/24/05	1308	5521-50-2	S	1	X										
	1306	5521-40-2													
	1310	5521-30-2													
	1413	5516-50-2													
	1424	5516-40-2													
V	1427	5516-30-2													
05/25/05	9:05	5517-50-1													
	9:10	5517-40-1													
	9:17	5517-30-1													
	9:40	5517-20-1													
	9:44	5517-10-1													
V	9:55	5517-00-1													

Relinquished By: Charles Wice Date _____ Time _____

Company: MFA

Received By: _____ Date _____ Time _____

Company: _____

Received For Lab By: Nikki Sutton Date 5/27/05 Time 9:55

Relinquished By: Charles Wice

Date

Time

Received By:

Relinquished By:

Date

Time

Company: MFA

Company:

Company:

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.

Copies: W/

Original

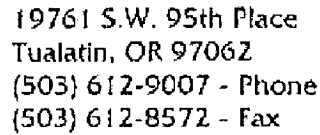
Yellow-Project File

Pink-Customer Copy

Received For Lab By:

Date

Time

Page 3 of 5

P.O. No. _____

Relinquished By: Company:	Date	Time	Received By: Company:	Relinquished By: Company:	Date	Time
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt. Copies: White-Original Yellow-Project File Pink-Customer Copy				Received For Lab By: <i>Nikki J. Hor</i>	Date <i>5/27/05</i>	Time <i>9:15</i>

ATTACHMENT B
DATA QUALITY ASSURANCE/QUALITY CONTROL MEMORANDA

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

ADVANCED AMERICAN CONSTRUCTION PROPERTIES, LLC

Soil Sampling, May 2005

0100.01.02

This report reviews the analytical results for soil samples collected by the Maul Foster & Alongi, Inc. (MFA) project team on the Advanced American Construction Properties, LLC site at 8444 NW St. Helens Road in Portland, Oregon. The samples were collected in May 2005.

Specialty Analytical (SA) in Tualatin, Oregon, performed the analyses. SA report number 0505158 was reviewed. The analysis performed is listed below.

Analysis	Reference
Benzo[a]pyrene	USEPA 8270 SIM

USEPA = U.S. Environmental Protection Agency

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable parts of USEPA procedures (USEPA, 1999), and appropriate laboratory and method-specific guidelines (SA, 2005; USEPA, 1986).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Holding Times, Preservation, and Sample Storage

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Blanks

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. No target analytes were detected above the SA reporting limits (RLs).

Equipment Rinsate Blanks

Rinsate blanks were not submitted for this sample set.

Surrogate Recovery Results

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogates were extracted and analyzed at the required frequency. All surrogate percent recoveries were within acceptance limits.

Matrix Spike/Matrix Spike Duplicate Results

Matrix spike/matrix spike duplicate (MS/MSD) results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. Various recovery results were outside SA acceptance limits because of non-target matrix interferences preventing accurate quantitation of the spiked analyte.

In accordance with the Functional Guidelines for Organics Data Review (USEPA, 1999), the reviewer took no action based on the MS/MSD outliers alone, as all other Batch quality control was within acceptance limits.

Laboratory Control Sample Results

A laboratory control sample (LCS) is spiked with target analytes to provide information on laboratory accuracy. The LCS samples were extracted and analyzed at the required frequency. All LCS analytes were within acceptance limits for percent recovery.

Laboratory Duplicate Results

Laboratory duplicate results are used to evaluate laboratory precision. No laboratory duplicate samples were analyzed with the sample delivery group.

Field Duplicate Results

Field duplicate samples measure both field and laboratory precision. Two field duplicates were collected and analyzed (see Table 1).

Table 1: Field Duplicate Positive Results Comparison

Sample ID	Component	Primary Sample Result	Duplicate Sample Result	RPD
SS7-50-1/SS7-50-1D	benzo[a]pyrene	38.7 µg/kg	14.7 µg/kg	89.8
SS15-30-2/SS15-30-2D	benzo[a]pyrene	88.7 µg/kg	4250 µg/kg	191.82
NOTES: µg/kg = micrograms per kilogram. RPD = relative percent difference.				

MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the RL, or 50 percent RPD for results that are greater than five times the RL. Based on field duplicate outliers, the results in bold were qualified as estimated (J) for the sample and the associated field duplicate. All other detected analytes were within acceptance criteria.

Reporting Limits

SA used routine RLs for non-detect results, with the exception of samples requiring dilutions due to high analyte concentrations.

Data Package

The data packages were reviewed for transcription errors, omissions, or anomalies. None was found.

REFERENCES

- SA. 2005. Quality assurance manual. Specialty Analytical, Tualatin, Oregon.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).
- USEPA. 1999. USEPA contract laboratory program, national functional guidelines for organics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA 540/R-99/008. October.

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

ADVANCED AMERICAN CONSTRUCTION PROPERTIES, LLC

Soil Sampling, April 2005

0100.01.02

This report reviews the analytical results for soil samples collected by the Maul Foster & Alongi, Inc. (MFA) project team on the Advanced American Construction Properties, LLC site at 8444 NW St. Helens Road in Portland, Oregon. The samples were collected in April 2005.

Specialty Analytical (SA) in Tualatin, Oregon, performed the analyses. SA report numbers 0504037 and 0504038 were reviewed. The analyses performed are listed below.

Analysis	Reference
Polycyclic Aromatic Hydrocarbons	USEPA 8270 SIM
Copper and Iron	USEPA 6010

USEPA = U.S. Environmental Protection Agency

SIM = Selected Ion Monitoring

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable parts of USEPA procedures (USEPA, 1994, 1999), and appropriate laboratory and method-specific guidelines (SA, 2004; USEPA, 1986).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Holding Times, Preservation, and Sample Storage

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Blanks

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. No target analytes were detected above the SA reporting limits (RLs).

Equipment Rinsate Blanks

Rinsate blanks were not submitted for this sample set.

Surrogate Recovery Results

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogates were extracted and analyzed at the required frequency. All surrogate percent recoveries were within acceptance limits.

Matrix Spike/Matrix Spike Duplicate Results

Matrix spike/matrix spike duplicate (MS/MSD) results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. Various recovery results were outside SA acceptance limits because of non-target matrix interferences preventing accurate quantitation of the spiked analyte.

In accordance with the Functional Guidelines for Organics Data Review (USEPA, 1999), the reviewer took no action based on the MS/MSD outliers alone, as all other Batch quality control was within acceptance limits.

MS and MSD percent recoveries were below acceptance limits for copper by USEPA 6010. In accordance with the Functional Guidelines for Inorganics Data Review (USEPA, 1994), the reviewer qualified all copper results as estimated (J).

Laboratory Control Sample Results

A laboratory control sample (LCS) is spiked with target analytes to provide information on laboratory accuracy. The LCS samples were extracted and analyzed at the required frequency. All LCS analytes were within acceptance limits for percent recovery.

Laboratory Duplicate Results

Laboratory duplicate results are used to evaluate laboratory precision. All laboratory duplicate samples were extracted and analyzed at the required frequency. Relative percent differences (RPDs) exceeded acceptance limits for copper by USEPA Method 6010. In accordance with the Functional Guidelines for Inorganics Data Review (USEPA, 1994), the reviewer qualified all results for copper as estimated (J). Copper results were previously qualified as estimated (J), due to MS/MSD exceedances.

Field Duplicate Results

Field duplicate samples measure both field and laboratory precision. Four field duplicate were collected and analyzed (see Table 1).

Table 1: Field Duplicate Positive Results Comparison

Sample ID	Component	Primary Sample Result	Duplicate Sample Result	RPD
SS12-1/SS12-1-D	benzo[a]pyrene	78.7 µg/kg	150 µg/kg	62.4
SS16-5-2/SS16-5-2-D	benzo[a]pyrene	73.3 µg/kg	30 µg/kg	83.8
SS17-1/SS17-1-D	benzo[a]pyrene	24.0 µg/kg	67.3 µg/kg	94.9
SS21-5-0/SS21-5-0-D	benzo[a]pyrene	178 µg/kg	183 µg/kg	2.8
SS21-5-0/SS21-5-0-D	lead	111 mg/kg	85.3 mg/kg	26.2
NOTES: mg/kg = milligrams per kilogram. µg/kg = micrograms per kilogram.				

MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the RL, or 50 percent RPD for results that are greater than five times the RL. Based on field duplicate outliers, the results in bold were qualified as estimated (J) for the sample and the associated field duplicate. All other detected analytes were within acceptance criteria.

Reporting Limits

SA used routine RLs for non-detect results, with the exception of samples requiring dilutions due to high analyte concentrations.

Data Package

The data packages were reviewed for transcription errors, omissions, or anomalies. None was found.

REFERENCES

- SA. 2004. Quality assurance manual. Specialty Analytical, Tualatin, Oregon.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).
- USEPA. 1994. USEPA contract laboratory program, national functional guidelines for inorganics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA 540/R-94/013. February.
- USEPA. 1999. USEPA contract laboratory program, national functional guidelines for organics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA 540/R-99/008. October.

SITE DEVELOPMENT REPORT

Prepared for:

ADVANCED AMERICAN CONSTRUCTION
PROPERTIES, LLC 8444 NW ST. HELENS ROAD
PORTLAND, OREGON

ADVANCED AMERICAN
CONSTRUCTION PROPERTIES, LLC

Project No. 0100.01.02

prepared by:

August 11, 2006

 MAUL
FOSTER
ALONGI INC.
ENVIRONMENTAL & ENGINEERING CONSULTANTS
Vancouver, WA | Portland, OR | www.MFAinc.org

AAC000228

Anna St. john

From: PUGH Mark [PUGH.Mark@deq.state.or.us]
Sent: Monday, June 18, 2007 1:27 PM
To: Anna St. john
Cc: Dee Burch
Subject: Advanced American

Anna,

I am preparing the staff report. I cannot determine exactly how much soil was removed from the soil management areas, because so areas were capped and material left in place. If you could modify table 4 of the Site development report to indicate how much/which material was removed from each area that would help greatly. I will replace the existing table. Thanks.

*Mark Pugh, R.G.
Project Manager
DEQ NWR Cleanup and Emergency Response
2020 SW 4th Avenue, Suite 400
Portland, Oregon 97201*

e-mail: Pugh.Mark@deq.state.or.us
Phone: 503 229-5587
fax: 503 229-6899

Visit DEQ's Website at www.deq.state.or.us

6/20/2007

AAC000229

Table 4
Soil Management Plan
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Horizontal Impacts (diameter [ft])	Vertical Impacts (ft bgs)	Volume of Impacted Soil Removed and Placed Under Building Pad (CY) (ton)		Exceed Source Control Levels (depth [ft], distance [diameter (ft)])?	Exceed PRGs and/or RBC _{ss} (Occupational) (depth [ft], distance [diameter (ft)])?	Exceed RBC _{ss} (Construction and Excavation Workers) (depth [ft], distance [diameter (ft)])?	Exceed Hot Spot Concentrations for Benthic Biota?	Estimated Current Elevation (ft NGVD)	Estimated Future Elevation (ft NGVD)	Action
SS7	30	1	26	39	Y (0, 20)	N	N	N	20	20	Soil was removed to 1 ft bgs within a 30-ft diameter of the sample location for source control. Soil was not excavated from the bank.
SS9	NA	NA	NA	NA	N	N	N	N	28	29	No source control measures were necessary. The area was paved as part of redevelopment.
SS12	50	3	218	327	Y (2, 50)	Y (2,0; 0,5;1,30;1,50)	N	N	16.8	16.8	Soil was removed to 3 ft bgs within a 50-ft diameter of the sample location for source control and to protect human receptors.
SS15	50	3	218	327	Y (2, 40)	Y (0,1; 5,2; 10,0; 20, 1.7; 30,2; 40,2)	Y (2,30)	Y (0,5; 0,10; 0,20; 2, 30)	29.4	29.4	Soil was removed to 3 ft bgs within a 50-ft diameter of the sample location. Soil was not excavated from the bank. Excavation, backfill, and capping as part of redevelopment provide a 3-ft-thick cap in this area, thereby eliminating exposure pathways for ecological and human receptors .
SS16	50	2	73	110	Y (0,5; 1,20; 2,30; 2,40; 2,50)	Y (0,5; 2,30; 2,40; 2,50)	N	N	29.3	29.95	This area was paved as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors. Approximately 1 ft of soil was excavated to accommodate the placement of gravel and asphalt to meet the final proposed elevation.
SS17	15	1	None	None	Y (0,5; 0,10; 1,20; 1,40)	Y (1,40)	N	N	28.45	33.35	Concentrations > SLV at 0 ft bgs between 5-ft and 20-ft diameters of the sample location. Concentration > SLV, PRG, and RBC at 1 ft bgs at 40-ft diameter. Detected concentrations do not exceed the RBCs for construction and excavation workers. Concentrations do not exceed hot spot levels for aquatic biota or human receptors. This area was capped with up to 5 ft of fill as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors.
SS18	50	3	None	None	Y (2,0; 1,5; 0,10; 2,20; 2,40; 2,50)	Y (0,5; 0,10; 2,20; 2,40)	N	N	29.0	35.0	Similar to SS17, this area was capped with up to 5 ft of fill, thereby eliminating exposure pathways for ecological and human receptors.
SS20	50	1	None	None	Y (2,0; 2,5; 2,10; 2,20; 2,40; 2,50)	Y (1,0; 2,5; 2,10; 2,20; 2,50)	Y (1,20)	Y (1,20)	30.5	33.5	This area was capped with up to 3 ft of fill and paved as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors.
SS21	50	2	None	None	Y (2,0; 2,5; 2,10; 2,20; 2,30; 2,40; 2,50)	Y (2,0; 2,5; 2,10; 2,20; 2,30; 2,40; 2,50)	N	Y (1,5; 2,5)	29.9	32.75	Concentrations > SLV, PRG, and/or RBC to 2 ft bgs within a 50-ft diameter of the sample location. Detected concentrations do not exceed the RBCs for construction and excavation workers. Detected concentrations do not exceed hot spot levels for benthic biota, except at 1 ft and 2 ft bgs at 5-ft diameter from SS-21. Detected concentrations do not exceed hot spot levels for human receptors. This area was capped with up to 3 ft of fill and paved as part of redevelopment, thereby eliminating exposure pathways for human and ecological receptors.

**SITE DEVELOPMENT REPORT
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES, LLC
8444 NW ST. HELENS ROAD
PORTLAND, OREGON**

Prepared for

Advanced American Construction Properties, LLC

August 11, 2006

Prepared by

Maul Foster & Alongi, Inc.
3121 SW Moody Avenue, Suite 200
Portland, Oregon 97239

Project No. 0100.01.02

**Site Development Report
Advanced American Construction Properties, LLC
8444 NW St. Helens Road
Portland, Oregon**

The material and data in this report were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.



Anna Maria St. John, RG
Project Manager

Ada Banasik, EIT
Staff Engineer

CONTENTS

TABLES AND ILLUSTRATIONS	vii
ACRONYMS AND ABBREVIATIONS	ix
1 INTRODUCTION	1-1
2 PLANNING AND PERMITTING	2-1
2.1 Planning and Design	2-1
2.2 Permitting	2-1
3 SOURCE CONTROL MEASURES	3-1
3.1 Soil Management Areas	3-1
3.2 Delineation of Soil Management Areas—Summary of Sampling and Analyses	3-1
3.3 Soil Excavation and Placement	3-2
4 DEMOLITION OF STRUCTURES	4-1
5 SITE PREPARATION	5-1
5.1 Geotechnical Evaluation	5-1
5.2 Site Clearing	5-2
5.3 Site Grading	5-2
5.4 Monitoring Well Decommissioning	5-3
5.5 Disposal of Investigation-Derived Wastes from Previous Investigations	5-3
6 INSTALLATION OF UTILITIES	6-1
6.1 Electrical	6-1
6.2 Storm Sewers	6-1
6.3 Sanitary Sewer	6-1
7 PAVING	7-1
8 BUILDING CONSTRUCTION	8-1

CONTENTS (Continued)

9 STORMWATER SAMPLING AND ANALYSES 9-1

LIMITATIONS

REFERENCES

TABLES

FIGURES

APPENDIX A SITE PERMITS

APPENDIX B PHOTOGRAPHS

APPENDIX C ANALYTICAL REPORTS

APPENDIX D DATA VALIDATION

APPENDIX E WASTE MANIFESTS AND DISPOSAL RECEIPTS

**APPENDIX F STORMWATER SYSTEM OPERATIONS AND
MAINTENANCE PLAN**

TABLES AND ILLUSTRATIONS

Following Report:

Tables

- 1 Site Redevelopment Chronology
- 2 Benzo(a)pyrene Concentrations in Soil Management Areas
- 3 Copper and Lead Concentrations in Soil Management Areas
- 4 Soil Management Plan
- 5 Polycyclic Aromatic Hydrocarbons in Soil from Geotechnical Investigation
- 6 Copper and Lead in Soil from Geotechnical Evaluation
- 7 Total Petroleum Hydrocarbons in Soil from Geotechnical Evaluation
- 8 Total Petroleum Hydrocarbons in Scrapings Samples
- 9 Total Metals in Scrapings Samples
- 10 TCLP Metals in Scrapings Samples
- 11 Volatile Organic Compounds in Scrapings Samples
- 12 Polycyclic Aromatic Hydrocarbons in Samples of Imported Fill
- 13 Total Lead in Samples of Imported Fill
- 14 Total Petroleum Hydrocarbons in Drum Sample
- 15 Total Metals in Drum Sample

Figures

- 1 Site Location
- 2 Soil Management Plan
- 3 Site Development and Utilities

ACRONYMS AND ABBREVIATIONS

AACP	Advanced American Construction Properties, LLC
BaP	benzo(a)pyrene
bgs	below ground surface
COP	City of Portland
cy	cubic yard
DEQ	Oregon Department of Environmental Quality
GM	Group Mackenzie
HC	Hart Crowser
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per kilogram
MRL	method reporting limit
µg/kg	micrograms per kilogram
ODOT	Oregon Department of Transportation
PAH	polycyclic aromatic hydrocarbon
PMP	Perlo McCormack Pacific
PPA	Prospective Purchaser Agreement
PRG	preliminary remediation goal
RBC	risk-based concentration
ROW	right-of-way
SCE Plan	Source Control and Evaluation Plan
SLV	screening level value
SMA	soil management areas
TCLP	toxicity characteristic leaching procedure
TPH	total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

Report

1 INTRODUCTION

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster & Alongi, Inc. (MFA) has prepared this Site Development Report for the property at 8444 NW St. Helens Road, Portland, Oregon (see Figure 1). AACP signed a Prospective Purchaser Agreement (PPA) with the Oregon Department of Environmental Quality (DEQ) on November 16, 2004, and purchased the property on November 24, 2004. The site was redeveloped for river-related uses. This report summarizes the investigations conducted before development to delineate the extent of soil impacts and excavate and remove them, if deemed necessary; and source control measures implemented during site development, as required by Section 2B of the PPA. Implemented source control measures included the excavation or capping of soil exceeding the source control screening criteria and installation of a stormwater management system and an asphalt cap.

This report also describes site development, including planning and permitting, demolition of structures, site clearing and grading, building construction, installation of utilities, paving, and materials disposal. Table 1 presents a chronology of site development.

2 PLANNING AND PERMITTING

AACP contracted with Group Mackenzie (GM) in October 2004 for planning and site design. This phase of the project included researching the planning and approval requirements for the project, programming building and site requirements, developing a site plan, reviewing stormwater outfall regulations and developing a design scheme to solve water quality design problems, developing a schematic grading and utility plan and floor plan for an office and warehouse building, attending a pre-application conference with the City of Portland (COP), and estimating development charges and permit fees.

In November 2004, AACP contracted with GM for the actual design of the building and associated site improvements, including construction documents, building permits, and construction administration, and also hired Hart Crowser (HC) to conduct geotechnical work for the project.

In April 2005, AACP signed a contract with Perlo McCormack Pacific (PMP) as its general contractor. PMP hired and managed all the subcontractor work, including demolition, grading, utilities, and construction.

2.1 Planning and Design

A copy of the site development plans prepared by GM was provided to the DEQ on June 30, 2005 and is included in Appendix A.

2.2 Permitting

The following permits were obtained before site development (see Appendix A for copies of the permits):

June 11, 2004 Earnest money agreement was signed to purchase property.

November 16, 2004 PPA (DEQ No. 04-08) was approved.

November 24, 2004 AACP purchased the property.

January 20, 2005	Crossing permit was obtained for St. Johns Bridge right-of-way (ROW) with Oregon Department of Transportation (ODOT).
January 26, 2005	Waterway lease with Oregon Department of Lands was secured.
June 15, 2005	"No-Rise" Certificate (fill in the floodplain) was obtained from the COP
September 21, 2005	Private rail crossing agreement with ODOT was signed.
March 8, 2005	National Pollutant Discharge Elimination System Permit was issued.
March 29, 2005	Stormwater Operations and Management Plan was recorded with Multnomah County.
March 30, 2005	Demolition permit was obtained from the COP.
May 23, 2005	Greenway permit was obtained from the COP.

3 SOURCE CONTROL MEASURES

3.1 Soil Management Areas

Surface soil exceeding the source control criteria, as defined in the risk screening and the Source Control and Evaluation Plan (SCE Plan) (MFA, 2004), required management measures to mitigate potential impacts to the river. Figure 2 shows locations where soil required some type of management (i.e., soil management areas [SMAs]). First, the lateral and vertical extents of soil impacts were delineated (see Section 3.2 below). Then, impacted soil at and around each sample location where the source control criteria were exceeded was excavated or capped to prevent possible erosion and transport of impacted soil to the river. Photographs of the investigation and soil excavation and placement activities are presented in Appendix B.

3.2 Delineation of Soil Management Areas—Summary of Sampling and Analyses

Before excavation, sample locations where the source control criteria were exceeded (see Figure 2, sample locations SS-7, SS-9, SS-12, SS-15 through SS-18, SS-20, and SS-21) were resurveyed and staked by a surveyor licensed in Oregon (Statewide Land Surveying, Inc. of Gresham, Oregon), and samples were collected and analyzed for copper (U.S. Environmental Protection Agency [USEPA] Method 6010), lead (USEPA Method 6010), and/or polycyclic aromatic hydrocarbons (PAHs) (USEPA Method 8270-SIM), depending on the location, to delineate the actual vertical and horizontal extents of impacted soil.

MFA collected soil samples in April and May 2005. Samples were collected using manual tools or a direct-push drill rig (Geoprobe™) at radii of 5 feet, 10 feet, and 20 feet of the sample location to determine the lateral extent of impacts. Samples were collected at ground surface, at 1 foot below ground surface (bgs), and at 2 feet bgs to determine the vertical extent of impacts in erodable soil within 100 feet of the top of the riverbank.

The samples were analyzed in a tiered manner by Specialty Analytical of Tualatin, Oregon. Initially, samples collected 5 feet away from the sample location at the ground surface and at 1 foot bgs were analyzed. Because detected concentrations in some of these samples exceeded source control screening levels, the deeper samples and samples

collected 10 feet away from the sample location were analyzed. This process was repeated until the vertical and lateral extents of the impacts had been delineated. Tables 2 and 3 summarize soil sampling results used to delineate the SMA. Analytical reports and a data quality assurance/quality control memorandum are presented in Appendices C and D, respectively. Table 4 summarizes the management plan for soil in the SMA. Figure 2 shows the extent of soil requiring management, based on the results of the source control screening. Photographs of the investigation are presented in Appendix B (see Photographs 5 and 6).

Generally, detected concentrations of benzo(a)pyrene (BaP) exceeded the source control screening levels (see Table 2). Additionally, some detected BaP concentrations exceeded risk-based concentrations (RBCs) for occupational workers based on direct contact with soil (e.g., USEPA Region 9 preliminary remediation goals [PRGs] [USEPA, 2004] and/or DEQ RBCs for petroleum-contaminated sites [DEQ, 2003]), but did not exceed RBCs for construction or excavation workers based on direct contact, except for one sample near SS-15 (SS-15-30Dup) and one sample near SS-20 (SS20-10-1) (see Table 2). Detected concentrations did not exceed hot spot levels for human receptors. Detected concentrations in samples SS-15, SS-20, and SS-21 exceeded the hot spot concentrations for benthic biota (see Tables 2 and 3). Copper and lead concentrations were below the source control screening levels (see Table 3).

3.3 Soil Excavation and Placement

In a July 18, 2005, electronic mail to the DEQ, MFA recommended that soil around SS-7 (except in the riverbank), SS-12, SS-15 (except in the riverbank), and SS-16 be excavated and placed under the footprint of the future building where future occupational workers would not contact the material (MFA, 2005) (see Table 4). The DEQ approved this approach during a site visit on July 19, 2006. Soil within a 30-foot diameter of SS-7 (except for the riverbank) was excavated to 1 foot bgs. Soil within a 50-foot diameter of SS-12 and SS-15 (except for the riverbank) was excavated to 3 feet bgs. Approximately 535 cubic yards (cy) was excavated and placed as a 3-foot-thick lift under the west side of the building slab (see Figure 3). The SS-15 and SS-16 excavations were backfilled with clean, imported fill, graded, and paved. Locations SS-7 and SS-12 (below the top of the bank in the former ferry landing area), ~~SS-17, and SS-18~~ were backfilled, graded, and capped with at least 5 feet of imported fill and gravel. The areas around SS-20 and SS-21 were capped with imported fill and gravel, thereby eliminating exposure pathways for ecological and human receptors. Photographs of soil excavation are presented in Appendix B.

and paved.

The areas around SS-17 and SS-18 were capped with a minimum of 5 feet of imported fill & gravel

4 DEMOLITION OF STRUCTURES

Before redevelopment, structures on the site included two metal Quonset huts, a wood-frame modular office building, a small trailer house, and a small wooden shed (see Figure 2). The actively used areas of the site had limited vegetative cover and consisted mostly of gravel. The riverbank is armored with riprap.

As part of redevelopment, the following structures were removed or demolished: the two metal Quonset huts, 40 feet by 200 feet; a wood-frame modular office building; a small trailer house; and a small wooden shed. A demolition permit was obtained from the COP on March 30, 2005 (see Appendix A), and work began in May 2005.

PMP hired Williams & Ryan for the demolition and site grading. The materials generated from the demolition activities included:

- Seventeen 40-cy containers of scrap metal (94,740 pounds) from building demolition that were transported to Schnitzer Steel
- Two 20-cy containers of nonrecyclable items from building demolition (e.g., toilets) that were transported to Waste Management
- Thirteen and one-half 12-cy loads of recyclable wood from building demolition that were transported to American Compost & Recycling

Approximately 1,138 tons of concrete from the Quonset huts' building slab remained on site and was crushed and used in construction of the project (e.g., used for structural fill).

5 SITE PREPARATION

5.1 Geotechnical Evaluation

AACP contracted with HC to conduct a geotechnical investigation in December 2004 to assess the quality of materials under the proposed structures. The borings were drilled with a hollow-stem auger drilling rig. Boring depths were advanced to between 20 and 70 feet, depending on the location (i.e., borings in the parking lots may extend to 20 feet bgs, while borings near crane locations may extend to 70 feet bgs). Samples were taken from eight boring locations between December 20 and 22, 2004, and analyzed for PAHs (USEPA Method 8270-SIM), total metals (USEPA Method 6010), and total petroleum hydrocarbons (TPH) (NWTPH-Gx and -Dx). Tables 5 through 7 summarize the results of the investigation. The analytical report is presented in Appendix C.

As noted in the SCE Plan (MFA, 2004), limited areas of soil were impacted above the source control screening criteria for aquatic receptors and/or USEPA PRGs and DEQ RBCs for industrial and construction/excavation workers. Soil impacts were limited to copper, lead, and PAHs in surface soil. Based on subsurface soil data (below 6 feet) available at the time, soil was not considered to be impacted above the DEQ RBCs. However, impacted soil could have been present near areas where site features had been located in the past (e.g., underground storage tanks and active product piping).

Consistent with the Contaminated Media Management Plan (see Section 6 of the SCE Plan) (MFA, 2004), soil was field-screened for petroleum-like odor, staining, sheen, and residual free product, and visibly impacted material was segregated from "clean" material. Representative samples were collected from the impacted soil and analyzed for petroleum hydrocarbons by NWTPH-Gx and -Dx methods for gasoline-, diesel-, and oil-range organics (sample HC-3/2.5). Detected concentrations were compared to the DEQ RBCs for occupational and construction worker exposure to gasoline, diesel, and oil in soil (DEQ, 2003). Approximately 3.5 tons of cuttings from the geotechnical drilling were disposed of at the Hillsboro Landfill on March 29, 2006, under Permit No. 9087 (see Appendix E).

5.2 Site Clearing

In order to prepare the site for development, the surface was cleared of all vegetation and the top layer of soil was scraped off during the summer of 2005. The scrapings were stockpiled and MFA collected composite grab samples of the scrapings (samples P1 through P4) for waste profiling. The scrapings samples were analyzed for TPH (NWTPH-HCID with -Gx and -Dx quantification for gasoline- and diesel-range organics), volatile organic compounds (VOCs) (USEPA Method 8260), metals (USEPA 6010), and lead (USEPA 6010B). Tables 8 through 11 summarize the results for the scrapings. The analytical reports are presented in Appendix C. Photographs of the site-clearing activities are presented in Appendix B.

TPH were detected in scrapings sample P1 at concentrations of 135 milligrams per kilogram (mg/kg) (diesel) and 629 mg/kg (lube oil) (see Table 8). TPH were not detected in samples P2 through P3, except for lube-oil hydrocarbons, which ranged from 326 mg/kg to 401 mg/kg. Metals (arsenic, barium, cadmium, chromium, lead, and mercury) were also detected in samples P1 and P2 (see Table 9). Samples P1 through P4 were also analyzed for metals by the toxicity characteristic leaching procedure (TCLP) method. Barium was the only metal detected by the TCLP method (see Table 10). VOCs were not detected at or above the method reporting limits (MRLs) (see Table 11).

The scrapings were disposed of at Waste Management's Hillsboro Landfill under Permit No. 9087. Approximately 816 tons of material was disposed of between August 16 and August 18, between September 12 and September 27, and on October 1, 2005. Manifests and disposal receipts are included in Appendix E.

5.3 Site Grading

Between July 20 and September 20, 2005, AACP imported approximately 8,000 cy of fill from the former Columbia Villa property in north Portland to be used as fill under the building footprint. Per the DEQ's July 18 and 19, 2005, electronic mails to MFA (DEQ, 2005a,b), the fill was tested to confirm that residual concentrations were below the DEQ RBCs for human health and the DEQ 2001 Level II ecological screening level values (SLVs) for freshwater sediment if the material is to be placed within 100 feet of the riverbank (DEQ, 2005a,b). MFA provided the DEQ with copies of environmental investigation reports for the former Columbia Villa property on July 19, 2005. At the DEQ's request, MFA collected one sample per every 1,000 cy of the fill and analyzed the samples for PAHs and total metals (e.g., lead). Eight samples were collected for characterization in July and August 2005. Two additional fill samples were collected in September 2005. Tables 12 and 13 summarize the results for the imported fill samples. The analytical reports are presented in Appendix C. Photographs showing fill placement and grading are presented in Appendix B.

Lead concentrations ranged from 5.22 mg/kg to 11.9 mg/kg. The human and ecological screening levels for lead are 750 mg/kg and 128 mg/kg, respectively. The USEPA Region 9 PRG for the direct-exposure pathway for industrial workers is 800 mg/kg. Therefore, the detected lead concentrations in the imported fill were well below the PRGs and source control screening levels.

BaP concentrations ranged from non-detect (i.e., less than 6.67 micrograms per kilogram ($\mu\text{g/kg}$) to 46.7 $\mu\text{g/kg}$. The human and ecological screening levels for BaP are 270 $\mu\text{g/kg}$ and 100 $\mu\text{g/kg}$, respectively. The USEPA Region 9 PRG for the direct-exposure pathway for industrial workers is 210 $\mu\text{g/kg}$. BaP concentrations in the imported fill were below the screening levels.

Based on these results, the DEQ determined that the fill was clean and suitable for use under the building footprint and across the site to reach final grade.

5.4 Monitoring Well Decommissioning

Six groundwater monitoring wells were installed at the site in 2003 to characterize chemical concentrations in shallow groundwater that may discharge to the Willamette River. Groundwater monitoring was conducted on a quarterly basis from April 2003 through April 2004. The risk evaluation (Section 3 of the SCE Plan [MFA, 2004]) determined that it is unlikely that site-related chemicals in groundwater could migrate to surface water or sediment of the Willamette River at concentrations that could pose unacceptable risks to aquatic biota or humans who catch and consume aquatic organisms near the site. GeoTech Explorations/Boart-Longyear, on behalf of AACP, decommissioned six monitoring wells (see Figure 2, MW-1 through MW-6) at the site in June 2005; wells were decommissioned by overdrilling, removing annular materials, and backfilling the holes with grout and bentonite chips hydrated with potable water. Well materials were disposed of at Hillsboro Landfill. Photographs of the well-decommissioning activities are presented in Appendix B (see Photographs 1 through 3).

5.5 Disposal of Investigation-Derived Wastes from Previous Investigations

Cuttings from HC's geotechnical evaluation were stored in drums at the AACP site. At the request of Waste Management, MFA collected a sample from the drums for waste profiling in February 2006 (Drum Soil 0206) and analyzed it for TPH, using NWTPH-HCID, and total metals by TCLP (see Tables 14 and 15). TPH were not detected above their respective reporting limits. Barium was the only metal detected above the MRL, with a concentration of 1.71 mg/kg. Approximately 3.5 tons of geotechnical drilling

material from the site was disposed of at the Hillsboro Landfill on March 29, 2006, under the same Permit No. 9087 (see Appendix E).

6 INSTALLATION OF UTILITIES

Figure 3 shows site utilities. Partial grading of the site began on July 20, 2005. However, final grading and preparation for utilities did not begin until the building permit was issued on August 8, 2005. A plumbing permit was issued for sanitary, storm, and water lines on August 17, 2005. A plumbing permit for fixtures was issued on August 25, 2005.

6.1 Electrical

The site is served by Portland General Electric from a power pole located on the site just east of the Portland and Western Railroad ROW, 72 feet south of the property's northern edge (see Figure 3). From this point, the line travels south along the railroad ROW underground for approximately 100 feet to the electrical room that serves the building. Three underground lines emanating from the southeast corner of the building serve the docks under the asphalt and gravel parking lots and the outside maneuvering and storage areas.

6.2 Storm Sewers

There is a 15-inch storm sewer line running north and south on the site just east of the building (see Figure 3). Two oil/water separator vaults under the south building canopy are tied into the line, as are the gutters and seven catch basins located around the site and equipped with inlet protection. The main 15-inch storm line goes through an 8-foot x 16-foot storm filter before connecting to a 15-inch outfall in the Willamette River at the northeast corner of the property.

6.3 Sanitary Sewer

There is a 6-inch sanitary line that extends approximately 180 feet from the building across the northwest parking lot and connects to a COP manhole at the northwest corner of the property.

7 PAVING

Most of the site was raised above the floodplain level, which required placement of up to 5 feet of imported fill in some areas. Approximately half of the AACP site is paved with asphalt or covered by the building (see Figure 3). Most of the paving is covered with “heavy-truck” paving consisting of two 4-inch layers of asphalt over a 6-inch layer of base aggregate, except for the parking stall area in the north portion of the site, which is covered with a 2-inch layer of asphalt over a 4-inch layer of base rock. The rest of the site is covered with at least 6 inches of 3/4-inch-0 gravel. The first lift of asphalt was placed on October 27, 2005. The second lift occurred in early 2006, before the Certificate of Occupancy was issued on April 18, 2006.

8 BUILDING CONSTRUCTION

Building construction began in August 2005 after the permit was obtained. Pile driving, foundation work, and building construction began in August 2005 and continued until April 2006. A Certificate of Occupancy was issued on April 18, 2006. AACP began full operations in the building in May 2006.

9 STORMWATER SAMPLING AND ANALYSES

As noted in Section 6.2, a stormwater system was installed at the site during redevelopment. Appendix F contains a COP-approved Operations and Maintenance Plan for the system. Quarterly stormwater sampling and analyses are required per Sections 2B(1) and (2) of the PPA. The scope of work for stormwater sampling and analyses was included in the SCE Plan. The DEQ requested a more focused scope of work for stormwater sampling in a March 10, 2006, electronic mail (DEQ, 2006). A scope of work was submitted on April 18, 2006, and was approved by the DEQ on May 2, 2006 (MFA, 2006a).

AACP began quarterly stormwater monitoring in May 2006. One sample was collected from the storm line immediately downgradient of the oil/water separator on May 26, and the samples were analyzed for metals (arsenic, cadmium, chromium, copper, lead, nickel, and zinc) by USEPA Method 6010/6020; for PAHs by USEPA Method 8270-SIM; and for TPH by NWTPH-Gx and -Dx for gasoline- and diesel-range organics, respectively (in addition to any permit requirements). All method detection limits and detected concentrations were below the 2005 DEQ/USEPA Joint Source Control Strategy SLVs for ecological receptors. Data were submitted to the DEQ on July 21, 2006 (MFA, 2006b). Quarterly stormwater sampling will continue for one year.

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

References

REFERENCES

- DEQ. 2003. Risked-based decision making for the remediation of petroleum-contaminated sites. Oregon Department of Environmental Quality. April 9.
- DEQ. 2005a. Electronic mail to A. St. John, Maul Foster & Alongi, Inc., from M. Pugh, Oregon Department of Environmental Quality, Oregon Department of Environmental Quality. July 18.
- DEQ. 2005b. Electronic mails to A. St. John, Maul Foster & Alongi, Inc., from M. Pugh, Oregon Department of Environmental Quality, Oregon Department of Environmental Quality. July 19.
- DEQ. 2006. Electronic mail to A. St. John, Maul Foster & Alongi, Inc., from M. Pugh, Oregon Department of Environmental Quality, Oregon Department of Environmental Quality. March 10.
- MFA. 2004. Source control and evaluation plan, Advanced American Construction Properties, LLC, Portland, Oregon. Prepared for Advanced American Construction Properties LLC, Portland, Oregon. Maul Foster & Alongi, Inc., Portland, Oregon. October 20.
- MFA. 2005. Electronic mail to M. Pugh, Oregon Department of Environmental Quality, from A. St. John, Maul Foster & Alongi, Inc. July 18, 2005.
- MFA. 2006a. Electronic mail to M. Pugh, Oregon Department of Environmental Quality, from A. St. John, Maul Foster & Alongi, Inc. April 18, 2006.
- MFA. 2006b. Letter (re May 2006 stormwater sampling event) to M. Pugh, Oregon Department of Environmental Quality, from A. St. John, Maul Foster & Alongi, Inc. July 21, 2006.
- USEPA. 2004. Memorandum (re Region 9 preliminary remediation goals [PRGs]) from S. J. Smucker, Ph.D., Regional Toxicologist. U.S. Environmental Protection Agency. October 20.

Tables

TABLES

Table Notes
Advanced American Construction Properties, LLC
Portland, Oregon

Bold font indicates that the concentration exceeds a screening level.

-- = not analyzed.

bgs = below ground surface.

CY = cubic yard.

DEQ = Oregon Department of Environmental Quality.

ft = feet.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

mg/kg = milligrams per kilogram.

mg/L = milligrams per liter.

µg/kg = micrograms per kilogram.

NA = not applicable.

NPDES = National Pollutant Discharge Elimination System.

NGVD = National Geodetic Vertical Datum of 1929.

NV = no value.

O&M plan = operation and maintenance plan.

PEC = consensus-based probable effect concentration.

PRGs = preliminary remediation goals based on direct contact with soil in an industrial setting (USEPA, 2004).

RBC = risk-based concentrations based on soil ingestion, dermal contact, and inhalation (DEQ, 2003).

SLV_{ss} = Source Control Screening Level = DEQ Screening Level Value for aquatic receptors in sediment, based on bioaccumulation (DEQ, 2001).

TCLP = toxicity characterization leaching procedure.

U = not detected at a specific reporting limit.

USEPA = U.S. Environmental Protection Agency.

Table 1
Site Redevelopment Chronology
Advanced American Construction Properties, LLC
Portland, Oregon

March 8, 2005	NPDES 1200-C permit issued (expires 12/31/05)
March 29, 2005	Stormwater O&M plan recorded
March 30, 2005	Demolition permit issued
May 23, 2005	Greenway permit approval
May 2005	Demolition of structures
July 20, 2005	Grading
August 16, 2005	Building permit issued
August 12, 2005– April 2006	Pile driving, foundation work, and building construction
August 17, 2005	Plumbing permit issued (sanitary and storm lines)
October 2005	Stormwater vault installed
October 27, 2005	Paving (first lift)
December 28, 2005	NPDES permit renewed (expires 11/30/2010)
March 29, 2006	Stormwater system operational
May 2006	Occupancy

Table 2
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment--Bioaccumulation					100
SS7	SS7-0	0504037-01A	4/8/2005	0	110
SS7	SS7-1	0504037-02A	4/8/2005	1	6.67 U
SS7	SS7-2	0504037-03A	4/8/2005	2	6.67 U
SS7-5	SS7-5-0	0504037-04A	4/8/2005	0	146
SS7-5	SS7-5-1	0504037-07A	4/8/2005	1	6.67 U
SS7-5	SS7-5-2	0504037-10A	4/8/2005	2	23.3
SS7-10	SS7-10-0	0504037-05A	4/8/2005	0	108
SS7-10	SS7-10-1	0504037-08A	4/8/2005	1	54.7
SS7-20	SS7-20-0	0504037-06A	4/8/2005	0	201
SS7-20	SS7-20-1	0504037-09A	4/8/2005	1	73.3
SS7-30	SS7-30-1	0505158-24A	5/25/2005	1	74.7
SS7-40	SS7-40-1	0505158-23A	5/25/2005	1	40.0
SS7-50	SS7-50-1	0505158-22A	5/25/2005	1	38.7
SS7-50	SS7-50Dup	0505158-22A	5/25/2005	1	14.7
SS12	SS12-0	0504037-15A	4/8/2005	0	117
SS12	SS12-1	0504037-16A	4/8/2005	1	78.7 J
SS12	SS12-1-Dup	0504037-16A	4/8/2005	1	150 J
SS12	SS12-2	0504037-18A	4/8/2005	2	230
SS12-5	SS12-5-0	0504037-19A	4/8/2005	0	325
SS12-5	SS12-5-1	0504037-22A	4/8/2005	1	30.7
SS12-5	SS12-5-2	0504037-25A	4/8/2005	2	123
SS12-10	SS12-10-0	0504037-20A	4/8/2005	0	165
SS12-10	SS12-10-1	0504037-23A	4/8/2005	1	127
SS12-10	SS12-10-2	0504037-26A	4/8/2005	2	131
SS12-20	SS12-20-0	0504037-21A	4/8/2005	0	170
SS12-20	SS12-20-1	0504037-24A	4/8/2005	1	48.0
SS12-20	SS12-20-2	0504037-27A	4/8/2005	2	78.7
SS12-30	SS12-30-1	0505158-21A	5/25/2005	1	262
SS12-40	SS12-40-1	0505158-20A	5/25/2005	1	132
SS12-50	SS12-50-1	0505158-19A	5/25/2005	1	365
SS15	SS15-0	0504037-28A	4/8/2005	0	151
SS15	SS15-1	0504037-29A	4/8/2005	1	111
SS15	SS15-2	0504037-30A	4/8/2005	2	97.3
SS15-5	SS15-5-0	0504037-31A	4/8/2005	0	1040
SS15-5	SS15-5-1	0504037-33A	4/8/2005	1	434
SS15-5	SS15-5-2	0504037-36A	4/8/2005	2	42.0

Table 2
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment—Bioaccumulation					100
SS15-10	SS15-10-0	0504037-32A	4/8/2005	0	1120
SS15-10	SS15-10-1	0504037-34A	4/8/2005	1	88.0
SS15-10	SS15-10-2	0504037-35A	4/8/2005	2	90.7
SS15-20	SS15-20-0	0504089-01A	4/22/2005	0	1150
SS15-20	SS15-20-1	0504089-02A	4/22/2005	0	203
SS15-20	SS15-20-1.7	0504089-03A	4/22/2005	0	191
SS15-30	SS15-30-1	0505158-31A	5/25/2005	1	30.7
SS15-30	SS15-30-2	0505158-28A	5/25/2005	2	88.7 J
SS15-30	SS15-30Dup	0505158-28A	5/25/2005	2	4250 J
SS15-40	SS15-40-1	0505158-30A	5/25/2005	1	36.0
SS15-40	SS15-40-2	0505158-27A	5/25/2005	2	325
SS15-50	SS15-50-1	0505158-29A	5/25/2005	1	39.3
SS15-50	SS15-50-2	0505158-26A	5/25/2005	2	37.3
SS16	SS16-0	0504037-37A	4/8/2005	0	53.3
SS16	SS16-1	0504037-38A	4/8/2005	1	41.3
SS16	SS16-2	0504037-39A	4/8/2005	2	98.7
SS16-5	SS16-5-0	0504037-40A	4/8/2005	0	383
SS16-5	SS16-5-1	0504037-43A	4/8/2005	1	92.7
SS16-5	SS16-5-2	0504037-46A	4/8/2005	2	73.3 J
SS16-5	SS16-5-2-Dup	0504037-46A	4/8/2005	2	30.0 J
SS16-10	SS16-10-0	0504037-41A	4/8/2005	0	56.0
SS16-10	SS16-10-1	0504037-44A	4/8/2005	1	81.3
SS16-20	SS16-20-0	0504037-42A	4/8/2005	0	231
SS16-20	SS16-20-1	0504037-45A	4/8/2005	1	173
SS16-30	SS16-30-2	0505158-18A	5/24/2005	2	225
SS16-40	SS16-40-2	0505158-17A	5/24/2005	2	358
SS16-50	SS16-50-2	0505158-16A	5/24/2005	2	528
SS17	SS17-0	0504037-50A	4/7/2005	0	48.7
SS17	SS17-1	0504037-51A	4/7/2005	1	24.0 J
SS17	SS17-Dup	0504037-51A	4/7/2005	1	67.3 J
SS17	SS17-2	0504037-53A	4/7/2005	2	40.7
SS17-5	SS17-5-0	0504037-54A	4/7/2005	0	103
SS17-5	SS17-5-1	0504037-57A	4/7/2005	1	10.7
SS17-5	SS17-5-2	0504037-60A	4/7/2005	2	75.3
SS17-10	SS17-10-0	0504037-55A	4/7/2005	0	147
SS17-10	SS17-10-1	0504037-58A	4/7/2005	1	77.3
SS17-20	SS17-20-0	0504037-56A	4/7/2005	0	38.0
SS17-20	SS17-20-1	0504037-59A	4/7/2005	1	124
SS17-30	SS17-30-1	0505158-06A	5/24/2005	1	86.7
SS17-30	SS17-30-2	0505158-05A	5/24/2005	2	21.3

Table 2
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment—Bioaccumulation					100
SS17-40	SS17-40-1	0505158-04A	5/24/2005	1	311
SS17-40	SS17-40-2	0505158-03A	5/24/2005	2	50.0
SS17-50	SS17-50-1	0505158-02A	5/24/2005	1	43.3
SS17-50	SS17-50-2	0505158-01A	5/24/2005	2	88.0
SS18	SS18-0	0504037-63A	4/7/2005	0	68.7
SS18	SS18-1	0504037-64A	4/7/2005	1	54.0
SS18	SS18-2	0504037-65A	4/7/2005	2	207
SS18-5	SS18-5-0	0504037-66A	4/7/2005	0	227
SS18-5	SS18-5-1	0504037-69A	4/7/2005	1	185
SS18-5	SS18-5-2	0504037-73A	4/7/2005	2	63.3
SS18-10	SS18-10-0	0504037-67A	4/7/2005	0	321
SS18-10	SS18-10-1	0504037-70A	4/7/2005	1	42.7
SS18-10	SS18-10-2	0504037-74A	4/7/2005	2	48.7
SS18-20	SS18-20-0	0504037-68A	4/7/2005	0	175
SS18-20	SS18-20-1	0504037-72A	4/7/2005	1	176
SS18-20	SS18-20-2	0504037-75A	4/7/2005	2	573
SS18-30	SS18-30-2	0505158-09A	5/24/2005	2	42.7
SS18-40	SS18-40-2	0505158-08A	5/24/2005	2	318
SS18-50	SS18-50-2	0505158-07A	5/24/2005	2	118
SS20	SS20-0	0504037-76A	4/7/2005	0	80.0
SS20	SS20-1	0504037-77A	4/7/2005	1	421
SS20	SS20-2	0504037-78A	4/7/2005	2	114
SS20-5	SS20-5-0	0504037-79A	4/7/2005	0	66.0
SS20-5	SS20-5-1	0504037-82A	4/7/2005	1	339
SS20-5	SS20-5-2	0504037-85A	4/7/2005	2	317
SS20-10	SS20-10-0	0504037-80A	4/7/2005	0	76.0
SS20-10	SS20-10-1	0504037-83A	4/7/2005	1	14600
SS20-10	SS20-10-2	0504037-86A	4/7/2005	2	467
SS20-20	SS20-20-0	0504037-81A	4/7/2005	0	41.3
SS20-20	SS20-20-1	0504037-84A	4/7/2005	1	455
SS20-20	SS20-20-2	0504037-87A	4/7/2005	2	485
SS20-30	SS20-30-2	0505158-12A	5/24/2005	2	81.3
SS20-40	SS20-40-2	0505158-11A	5/24/2005	2	135
SS20-50	SS20-50-2	0505158-10A	5/24/2005	2	317
SS21	SS21-0	0504038-01A	4/7/2005	0	123
SS21	SS21-1	0504038-02A	4/7/2005	1	532
SS21	SS21-2	0504038-03A	4/7/2005	2	703

Table 2
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment—Bioaccumulation					100
SS21-5	SS21-5-0	0504038-04A	4/7/2005	0	178
SS21-5	SS21-5-0-Dup	0504038-04A	4/7/2005	0	183
SS21-5	SS21-5-1	0504038-08A	4/7/2005	1	1580
SS21-5	SS21-5-2	0504038-11A	4/7/2005	2	1330
SS21-10	SS21-10-0	0504038-06A	4/7/2005	0	143
SS21-10	SS21-10-1	0504038-09A	4/7/2005	1	455
SS21-10	SS21-10-2	0504038-12A	4/7/2005	2	749
SS21-20	SS21-20-1	0504038-10A	4/7/2005	1	327
SS21-20	SS21-20-2	0504038-13A	4/7/2005	2	481
SS21-30	SS21-30-2	0505158-15A	5/24/2005	2	447
SS21-40	SS21-40-2	0505158-14A	5/24/2005	2	145
SS21-50	SS21-50-2	0505158-13A	5/24/2005	2	950

Table 3
Copper and Lead Concentrations in Soil Management Areas (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

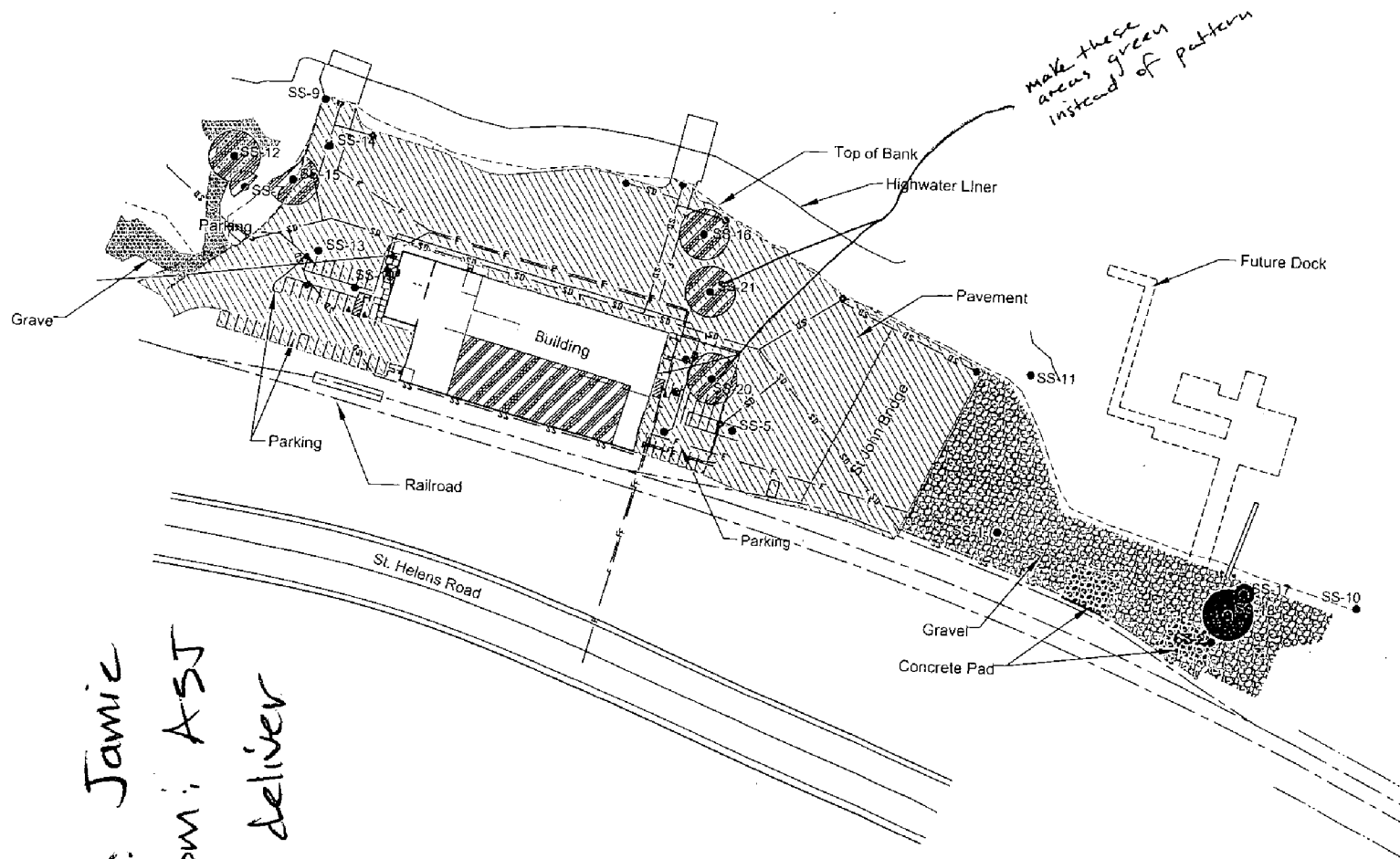
Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Copper	Lead
USEPA Region 9 PRG (Industrial)					41000	800
DEQ RBC _{ss} (Occupational)					NA	750
DEQ RBC _{ss} (Construction)					NA	750
DEQ RBC _{ss} (Excavation)					NA	750
DEQ Level II SLV for Sediment--Bioaccumulation					149	128
SS21	SS21-0	0504038-01A	4/7/2005	0	--	107
SS21	SS21-1	0504038-02A	4/7/2005	1	--	5.88
SS21	SS21-2	0504038-03A	4/7/2005	2	--	7.06
SS21-5	SS21-5-0	0504038-04A	4/7/2005	0	--	111
SS21-5	SS21-5-0-Dup	0504038-04A	4/7/2005	0	--	85.3
SS21-5	SS21-5-1	0504038-08A	4/7/2005	1	--	3.73
SS21-5	SS21-5-2	0504038-11A	4/7/2005	2	--	9.48
SS21-10	SS21-10-0	0504038-06A	4/7/2005	0	--	59.5
SS21-10	SS21-10-1	0504038-09A	4/7/2005	1	--	4.52
SS21-10	SS21-10-2	0504038-12A	4/7/2005	2	--	9.20
SS21-20	SS21-20-1	0504038-10A	4/7/2005	1	--	30.2
SS21-20	SS21-20-2	0504038-13A	4/7/2005	2	--	6.52
SS9	SS9-0	0504037-13A	4/8/2005	0	109 J	--
SS9-5	SS9-5-0	0504037-14A	4/8/2005	0	102 J	--

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Figure 3
Site Development
and Utilities

Advanced American
Construction Properties, LLC
Portland, Oregon



Legend:

- Surface Soil Sample Location
- Areas That Were Capped in Place
- S0 — Stormwater Lines
- SS — Sanitary Lines
- F — Firewater Lines
- ▨ Pavement (At Least 6" of Rock and 4" of Asphalt and in Some Areas Underlain by Imported Fill)
- ▩ Gravel Underlain by Imported Fill
- ▧ Soil with concentrations exceeding source control criteria were excavated and placed the under building foundation (~535 cubic yards)

SS-17 and SS-18 were capped with up to 5 feet of imported fill and gravel. SS-20 and SS-21 were capped with up to 3 feet of imported fill and gravel and paved.

Note:
Base map from drawings provided by Group Mackenzie on April 4, 2005.



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Table 4
Soil Management Plan
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Horizontal Impacts (diameter [ft])	Vertical Impacts (ft bgs)	Volume of Impacted Soil (CY) (ton)		Exceed Source Control Levels (depth [ft], distance [diameter (ft)])?	Exceed PRGs and/or RBC _{ss} (Occupational) (depth [ft], distance [diameter (ft)])?	Exceed RBC _{ss} (Construction and Excavation Workers) (depth [ft], distance [diameter (ft)])?	Exceed Hot Spot Concentrations for Benthic Biota?	Estimated Current Elevation (ft NGVD)	Estimated Future Elevation (ft NGVD)	Action
SS7	30	1	26	39	Y (0, 20)	N	N	N	20	20	Soil was removed to 1 ft bgs within a 30-ft diameter of the sample location for source control. Soil was not excavated from the bank.
SS9	NA	NA	NA	NA	N	N	N	N	28	29	No source control measures were necessary. The area was paved as part of redevelopment.
SS12	50	3	218	327	Y (2, 50)	Y (2,0; 0,5;1,30;1,50)	N	N	16.8	16.8	Soil was removed to 3 ft bgs within a 50-ft diameter of the sample location for source control and to protect human receptors.
SS15	50	3	218	327	Y (2, 40)	Y (0,1; 5,2; 10,0; 20, 1,7; 30,2; 40,2)	Y (2,30)	Y (0,5; 0,10; 0,20; 2, 30)	29.4	29.4	Soil was removed to 3 ft bgs within a 50-ft diameter of the sample location. Soil was not excavated from the bank. Excavation, backfill, and capping as part of redevelopment provide a 3-ft-thick cap in this area, thereby eliminating exposure pathways for ecological and human receptors .
SS16	50	2	146	220	Y (0,5; 1,20; 2,30; 2,40; 2,50)	Y (0,5; 2,30; 2,40; 2,50)	N	N	29.3	29.95	This area was paved as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors. Approximately 1 ft of soil was excavated to accommodate the placement of gravel and asphalt to meet the final proposed elevation.
SS17	15	1	6.5	10	Y (0,5; 0,10; 1,20; 1,40)	Y (1,40)	N	N	28.45	33.35	Concentrations > SLV at 0 ft bgs between 5-ft and 20-ft diameters of the sample location. Concentration > SLV, PRG, and RBC at 1 ft bgs at 40-ft diameter. Detected concentrations do not exceed the RBCs for construction and excavation workers. Concentrations do not exceed hot spot levels for aquatic biota or human receptors. This area was capped with up to 5 ft of fill as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors.
SS18	50	3	218	327	Y (2,0; 1,5; 0,10; 2,20; 2,40; 2,50)	Y (0,5; 0,10; 2,20; 2,40)	N	N	29.0	35.0	Similar to SS17, this area was capped with up to 5 ft of fill, thereby eliminating exposure pathways for ecological and human receptors.
SS20	50	1	73	110	Y (2,0; 2,5; 2,10; 2,20; 2,40; 2,50)	Y (1,0; 2,5; 2,10; 2,20; 2,50)	Y (1,20)	Y (1,20)	30.5	33.5	This area was capped with up to 3 ft of fill and paved as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors.
SS21	NA	NA	NA	NA	Y (2,0; 2,5; 2,10; 2,20; 2,30; 2,40; 2,50)	Y (2,0; 2,5; 2,10; 2,20; 2,30; 2,40; 2,50)	N	Y (1,5; 2,5)	29.9	32.75	Concentrations > SLV, PRG, and/or RBC to 2 ft bgs within a 50-ft diameter of the sample location. Detected concentrations do not exceed the RBCs for construction and excavation workers. Detected concentrations do not exceed hot spot levels for benthic biota, except at 1 ft and 2 ft bgs at 5-ft diameter from SS-21. Detected concentrations do not exceed hot spot levels for human receptors. This area was capped with up to 3 ft of fill and paved as part of redevelopment, thereby eliminating exposure pathways for human and ecological receptors.

Table 5
Polycyclic Aromatic Hydrocarbons in Soil from Geotechnical Investigation (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Date	Sample Interval (ft bgs)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(ghi)-perylene	Benzo(k)-fluoranthene
USEPA Region 9 PRG (Industrial)			2.90E+07	NA	1.00E+08	2.10E+03	2.10E+02	2.10E+04	NA	2.10E+03
DEQ RBC _{ss} (Construction Worker)			1.60E+07	NA	1.00E+08	5.90E+05	5.90E+04	5.90E+05	NA	5.90E+06
HC-1	12/21/04	0-15	15.3	10.0	11.3	51.3	90.7	85.3	87.3	30.0
HC-2	12/20/04	0-20	6.67 U	6.67 U	6.67 U	11.3	18.0	23.3	17.3	8.67
HC-3	12/21/04	0-1	78.0	38.0	82.7	107	135	238	145	63.3
HC-3	12/21/04	2.5	12.0	11.3	10.0	6.67 U	6.67 U	7.33	14.7	6.67 U
HC-3	12/21/04	5-17.5	12.0	8.00	26.0	35.3	44.0	61.3	44.7	18.0
HC-4	12/21/04	0-1	28.0	12.7	14.7	94.0	161	181	147	54.7
HC-4	12/21/04	2.5-25	153	43.3	102	236	339	348	284	103
HC-5	12/20/04	0-20	41.3	19.3	50.7	133	183	190	159	62.0
HC-6	12/22/04	0-17.5	6.67 U	6.67 U	6.67 U	14.0	20.7	22.0	19.3	7.33
HC-7	12/22/04	0-1	6.67 U	6.67 U	6.67 U	17.3	24.7	31.3	18.0	10.7
HC-7	12/22/04	2.5-20	8.67	6.67 U	6.67 U	30.0	37.3	41.3	31.3	15.3
HC-8	12/22/04	0-10	8.00	6.67 U	8.67	22.0	28.0	31.3	32.7	10.7

Table 5
Polycyclic Aromatic Hydrocarbons in Soil from Geotechnical Investigation (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Date	Sample Interval (ft bgs)	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
USEPA Region 9 PRG (Industrial)			2.10E+05	2.10E+02	2.20E+07	2.60E+07	2.10E+03	1.90E+05	NA	2.90E+07
DEQ RBC _{ss} (Construction Worker)			5.90E+07	5.90E+04	1.00E+08	1.00E+08	5.90E+05	2.00E+07	NA	1.00E+08
HC-1	12/21/04	0-15	58.0	15.3	112	12.0	62.7	31.3	66.7	128
HC-2	12/20/04	0-20	16.0	6.67 U	38.7	6.67 U	13.3	15.3	24.0	34.7
HC-3	12/21/04	0-1	120	32.0	205	74.0	130	33.3	120	191
HC-3	12/21/04	2.5	6.67 U	6.67 U	10.0	54.0	8.67	37.3	116	18.0
HC-3	12/21/04	5-17.5	36.7	12.0	89.3	22.0	34.7	35.3	95.3	92.7
HC-4	12/21/04	0-1	107	30.7	208	22.7	109	19.3	90.7	211
HC-4	12/21/04	2.5-25	259	34.7	787	157	189	75.3	397	921
HC-5	12/20/04	0-20	137	26.7	390	42.7	114	120	181	449
HC-6	12/22/04	0-17.5	14.7	6.67 U	28.0	6.67 U	14.0	6.67 U	14.0	30.0
HC-7	12/22/04	0-1	16.7	6.67 U	29.3	6.67 U	14.7	6.67 U	13.3	27.3
HC-7	12/22/04	2.5-20	31.3	8.00	72.0	8.00	23.3	8.67	38.0	68.7
HC-8	12/22/04	0-10	23.3	8.00	46.7	7.33	20.0	6.67 U	21.3	49.3

Table 6
Copper and Lead in Soil from Geotechnical Evaluation (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Date	Sample Interval (ft bgs)	Total Metals	
			Copper	Lead
USEPA Region 9 PRG (Industrial)			4.1E+04	8.0E+02
DEQ RBC _{ss} (Construction Worker)			NA	7.5E+02
HC-3	12/21/04	0-1	65.7	37.1
HC-3	12/21/04	2.5	33.4	32.3
HC-3	12/21/04	5-17.5	25.2	18.0
HC-4	12/21/04	0-1	16.7	14.8
HC-4	12/21/04	2.5-25	21.7	26.6
HC-7	12/22/04	0-1	26.7	23.9
HC-7	12/22/04	2.5-20	18.4	24.0

Table 7
Total Petroleum Hydrocarbons in Soil
from Geotechnical Evaluation (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Date	Sample Interval (ft bgs)	Total Petroleum Hydrocarbons		
			Gasoline-Range Hydrocarbons	Diesel-Range Hydrocarbons	Lube-Oil-Range Hydrocarbons
USEPA Region 9 PRG (Industrial)			NA	NA	NA
DEQ RBC _{ss} (Construction Worker)			2.2E+04	7.0E+04	4.0E+04
HC-3	12/21/04	0-1	--	--	--
HC-3	12/21/04	2.5	233	282	84.0
HC-3	12/21/04	5-17.5	--	--	--
HC-4	12/21/04	0-1	--	--	--
HC-4	12/21/04	2.5-25	--	--	--
HC-7	12/22/04	0-1	--	--	--
HC-7	12/22/04	2.5-20	--	--	--

Table 8
Total Petroleum Hydrocarbons in Scrapings Samples (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Diesel-Range Hydrocarbons	Gasoline-Range Hydrocarbons	Kerosene-Range Hydrocarbons	Lube-Oil-Range Hydrocarbons	Mineral Spirits
P1	0507080-01B	7/19/2005	135	20.6 U	51.5 U	629	20.6 U
P2	0508012-01B	8/2/2005	15.5 U	20.6 U	51.5 U	401	20.6 U
P3	0508078-01A	8/18/2005	16.2 U	21.6 U	53.9 U	395	21.6 U
P4	0508078-02A	8/18/2005	15.6 U	20.8 U	52.1 U	326	20.8 U

Table 9
Total Metals in Scrapings Samples (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
P1	0507080-01B	7/19/2005	26.4	117	1.03	80.6	159	0.0484	2 U	2 U
P2	0508012-01B	8/2/2005	4.17	98.7	0.727	36.4	135	0.0856	1.82 U	1.82 U

Table 10
TCLP Metals in Scrapings Samples (mg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
P1	0507080-01B	7/19/2005	--	--	--	--	0.02 U	--	--	--
P2	0508012-01B	8/2/2005	0.1 U	2.50	0.00650	0.0380	0.1 U	0.0001 U	0.1 U	0.05 U
P3	0508078-01A	8/18/2005	0.1 U	3.42	0.00750	0.025 U	0.1 U	0.0001 U	0.1 U	0.05 U
P4	0508078-02A	8/18/2005	0.1 U	2.83	0.00550	0.025 U	0.1 U	0.0001 U	0.1 U	0.05 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethylene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane
P1	0507080-01B	7/19/2005	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	1,2,4-Trichloro-benzene	1,2,4-Trimethyl-benzene	1,2-Dibromo-3-chloropropane	1,2-Dibromo-ethane (EDB)	1,2-Dichloro-benzene	1,2-Dichloro-ethane	1,2-Dichloro-propane	1,3,5-Trimethyl-benzene
P1	0507080-01B	7/19/2005	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	1,3-Dichloro-benzene	1,3-Dichloro-propane	1,4-Dichloro-benzene	2,2-Dichloro-propane	2-Butanone (MEK)	2-Chloro-toluene	2-Hexanone	4-Chloro-toluene
P1	0507080-01B	7/19/2005	10 U	10 U	10 U	10 U	20 U	10 U	20 U	10 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	4-Isopropyl-toluene	Acetone	Benzene	Bromo-benzene	Bromo-dichloro-methane	Bromoform	Bromo-methane	Carbon Disulfide
P1	0507080-01B	7/19/2005	10 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Carbon Tetrachloride	Chloro-benzene	Chlorobromo-methane	Chloro-ethane	Chloroform	Chloro-methane	cis-1,2-Dichloro-ethene	cis-1,3-Dichloro-propene
P1	0507080-01B	7/19/2005	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Dibromo-chloro-methane	Dibromo-methane	Dichloro-difluoro-methane	Ethyl-benzene	Hexachloro-butadiene	Isopropyl-benzene (Cumene)	m,p-Xylene	Methyl isobutyl-ketone (MIBK)
P1	0507080-01B	7/19/2005	10 U	10 U	10 U	10 U	10 U	10 U	20 U	20 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Methyl tert-butyl Ether	Methylene Chloride	Naphthalene	n-Butyl-benzene	n-Propyl-benzene	o-Xylene	sec-Butyl-benzene	Styrene
P1	0507080-01B	7/19/2005	10 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 11
Volatile Organic Compounds in Scrapings Samples (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Chloride
P1	0507080-01B	7/19/2005	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 12
Polycyclic Aromatic Hydrocarbons in Samples of Imported Fill (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene
USEPA Region 9 PRG (Industrial)			29,000,000	NV	100,000,000	2,100	210
DEQ RBC _{ss} (Occupational)			41,000,000	NV	>100,000,000	2,700	270
DEQ RBC _{ss} (Construction)			16,000,000	NV	90,000,000	21,000	2,100
DEQ RBC _{ss} (Excavation)			>100,000,000	NV	>100,000,000	590,000	59,000
Reliable Consensus-Based PEC for Sediment			NV	NV	NV	1,050	1,450
DEQ Level II SLV for Sediment—Bioaccumulation			NV	NV	NV	NV	100
FILL 1	0507083-01A	7/20/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U
FILL 2	0507083-02A	7/20/2005	12.0	6.67 U	47.3	51.3	46.7
FILL 3	0507083-03A	7/20/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U
FILL 4	0507083-04A	7/21/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U
FILL 5	0507125-01A	7/29/2005	13.3 U	13.3 U	13.3 U	13.3 U	13.3 U
FILL 6	0507125-02A	7/29/2005	13.3 U	13.3 U	13.3 U	13.3 U	13.3 U
FILL 7	0508026-01A	8/2/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U
FILL 8	0508026-02A	8/3/2005	6.67 U	6.67 U	6.67 U	7.33	7.33
FILL 9	0509100-01A	9/20/2005	6.67 U	6.67 U	6.67 U	23.3	34.0
FILL 10	0509100-02A	9/20/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U

Table 12
Polycyclic Aromatic Hydrocarbons in Samples of Imported Fill (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Benzo(b)-fluoranthene	Benzo(ghi)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene
USEPA Region 9 PRG (Industrial)			2,100	NV	21,000	210,000	210	22,000,000
DEQ RBC _{ss} (Occupational)			2,700	NV	27,000	270,000	270	29,000,000
DEQ RBC _{ss} (Construction)			21,000	NV	210,000	2,100,000	2,100	8,900,000
DEQ RBC _{ss} (Excavation)			590,000	NV	5,900,000	59,000,000	59,000	>100,000,000
Reliable Consensus-Based PEC for Sediment			NV	NV	NV	1,290	NV	NV
DEQ Level II SLV for Sediment—Bioaccumulation			NV	NV	NV	NV	NV	NV
FILL 1	0507083-01A	7/20/2005	6.67 U	7.33	6.67 U	6.67 U	6.67 U	6.67 U
FILL 2	0507083-02A	7/20/2005	57.3	30.0	20.0	48.7	11.3	73.3
FILL 3	0507083-03A	7/20/2005	8.67	10.7	6.67 U	6.67 U	6.67 U	6.67 U
FILL 4	0507083-04A	7/21/2005	8.00	8.67	6.67 U	6.67 U	6.67 U	6.67 U
FILL 5	0507125-01A	7/29/2005	13.3 U	13.3 U	13.3 U	13.3 U	13.3 U	13.3
FILL 6	0507125-02A	7/29/2005	13.3 U	13.3 U	13.3 U	13.3 U	13.3 U	13.3 U
FILL 7	0508026-01A	8/2/2005	10.0	8.67	6.67 U	6.67 U	6.67 U	8.67
FILL 8	0508026-02A	8/3/2005	10.0	8.00	6.67 U	7.33	6.67 U	12.0
FILL 9	0509100-01A	9/20/2005	40.0	47.3	10.0	20.7	8.00	40.7
FILL 10	0509100-02A	9/20/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U

Table 12
Polycyclic Aromatic Hydrocarbons in Samples of Imported Fill (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Fluorene	Indeno(1,2,3-cd)-pyrene	Naphthalene	Phenanthrene	Pyrene
USEPA Region 9 PRG (Industrial)			26,000,000	2,100	190,000	NV	29,000,000
DEQ RBC _{ss} (Occupational)			35,000,000	2,700	770,000	NV	21,000,000
DEQ RBC _{ss} (Construction)			12,000,000	21,000	710,000	NV	6,700,000
DEQ RBC _{ss} (Excavation)			>100,000,000	590,000	20,000,000	NV	>100,000,000
Reliable Consensus-Based PEC for Sediment			NV	NV	561	1,170	1,520
DEQ Level II SLV for Sediment—Bioaccumulation			NV	NV	NV	NV	NV
FILL 1	0507083-01A	7/20/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U
FILL 2	0507083-02A	7/20/2005	14.0	26.0	6.67 U	133	88.7
FILL 3	0507083-03A	7/20/2005	6.67 U	6.67 U	6.67 U	6.67 U	7.33
FILL 4	0507083-04A	7/21/2005	6.67 U	6.67 U	6.67 U	6.67 U	7.33
FILL 5	0507125-01A	7/29/2005	13.3 U	13.3 U	13.3 U	13.3 U	16.0
FILL 6	0507125-02A	7/29/2005	13.3 U	13.3 U	13.3 U	13.3 U	13.3 U
FILL 7	0508026-01A	8/2/2005	6.67 U	6.67 U	6.67 U	6.67 U	10.0
FILL 8	0508026-02A	8/3/2005	6.67 U	6.67 U	6.67 U	7.33	13.3
FILL 9	0509100-01A	9/20/2005	6.67 U	32.0	12.7	20.7	50.7
FILL 10	0509100-02A	9/20/2005	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U

Table 13
Total Lead in Samples of Imported Fill (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Lead
USEPA Region 9 PRG (Industrial)			800
DEQ RBC _{ss} (Occupational)			750
DEQ RBC _{ss} (Construction)			750
DEQ RBC _{ss} (Excavation)			750
DEQ Level II SLV for Sediment—Bioaccumulation			128
FILL 1	0507083-01A	7/20/2005	10.9
FILL 2	0507083-02A	7/20/2005	11.1
FILL 3	0507083-03A	7/20/2005	9.09
FILL 4	0507083-04A	7/21/2005	10.5
FILL 5	0507125-01A	7/29/2005	10.4
FILL 6	0507125-02A	7/29/2005	5.22
FILL 7	0508026-01A	8/2/2005	7.38
FILL 8	0508026-02A	8/3/2005	11.9
FILL 9	0509100-01A	9/20/2005	9.23
FILL 10	0509100-02A	9/20/2005	9.42

Table 14
Total Petroleum Hydrocarbons in Drum Sample (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Gasoline-Range Hydrocarbons	Diesel-Range Hydrocarbons	Lube-Oil-Range Hydrocarbons	Kerosene-Range Hydrocarbons	Mineral Spirits
USEPA Region 9 PRG (Industrial)			NV	NV	NV	NV	NV
DEQ RBC _{ss} (Occupational)			22,000	70,000	NV	NV	NV
DEQ RBC _{ss} (Construction)			13,000	23,000	NV	NV	NV
DEQ RBC _{ss} (Excavation)			>100,000	>100,000	NV	NV	NV
Reliable Consensus-Based PEC			NV	NV	NV	NV	NV
DEQ Level II SLV for Sediment—Bioaccumulation			NV	NV	NV	NV	NV
DRUM SOIL	0602115-01A	2/24/2006	23.8 U	59.5 U	119 U	59.5 U	23.8 U

Table 15
Total Metals in Drum Sample (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
DRUM SOIL	0602115-01A	2/24/2006	0.1 U	1.71	0.005 U	0.025 U	0.1 U	0.0001 U	0.1 U	0.101

Figures

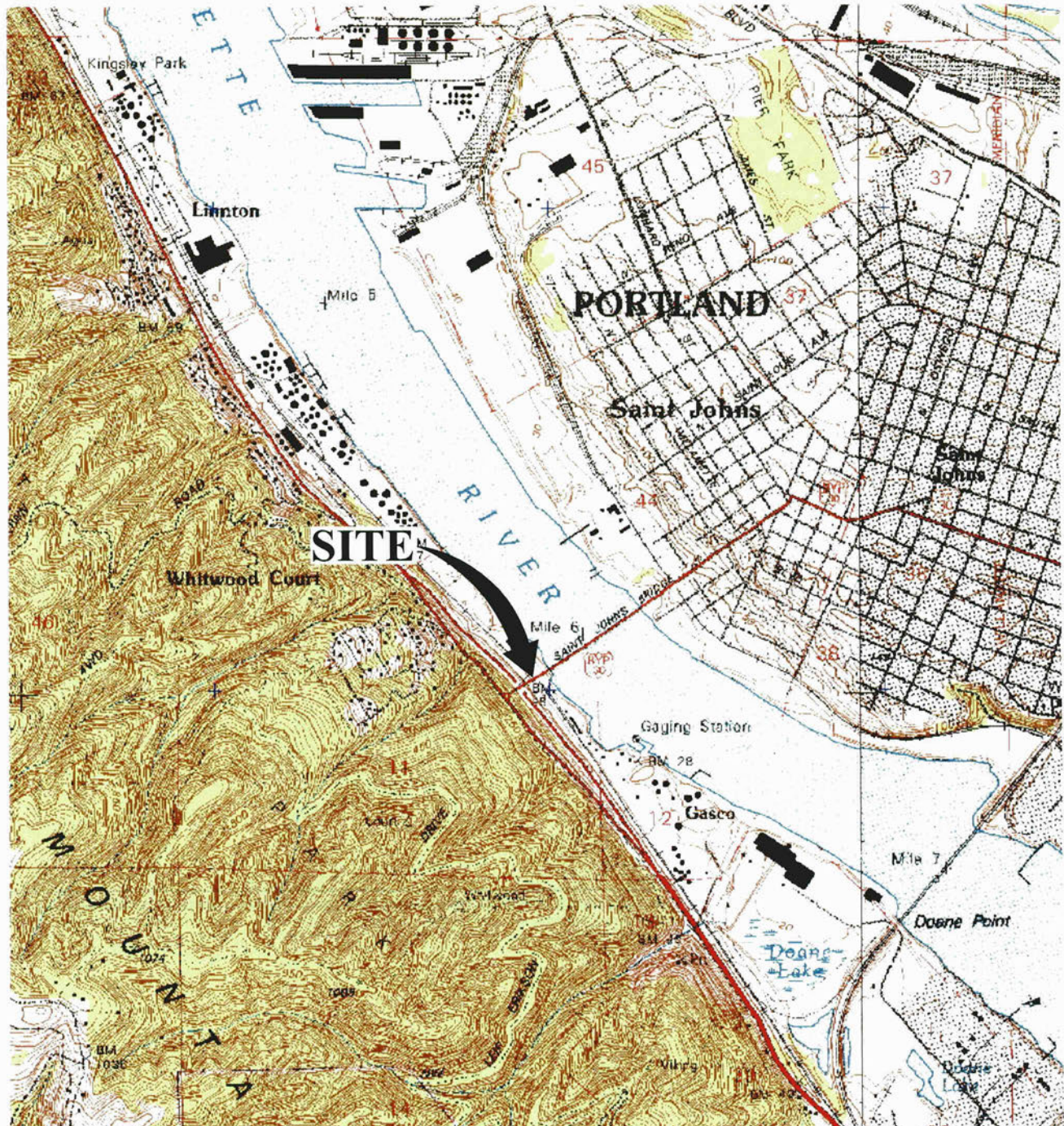
FIGURES



Figure 1 Site Location

**Advanced American
Construction Properties, LLC
Portland, Oregon**

Source: Base Map Prepared from DeLorme 3-D TopoQuads (1999)
Site Address: 8444 NW St. Helens Road, Portland, Oregon
Section: 11 Township: 1N Range: 1W Of Willamette Meridian



File: G:\0100.01 ADVANCED AMER CONSTRUCTION PROPERTIES, LLC\02 SITE DEVELOPMENT RPT\FIG1 SITE LOCATION.DWG Last edited: AUG. 03, 2006 @ 09:57 a.m. by: cadduser Xrefs: none black/white

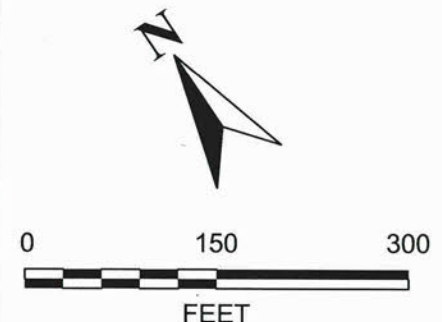
File: G:\0100.01 ADVANCED AMER CONSTRUCTION PROPERTIES, LLC\02 SITE DEVELOPMENT RPT\FIG2 SOIL MGMT PLAN.DWG Last edited: AUG. 11, 2006 @ 08:14 a.m. by: cadduser Xrefs: sample base, sample base for Source Control, Site 5
2006 blackwhite

Figure 2
Soil Management Plan

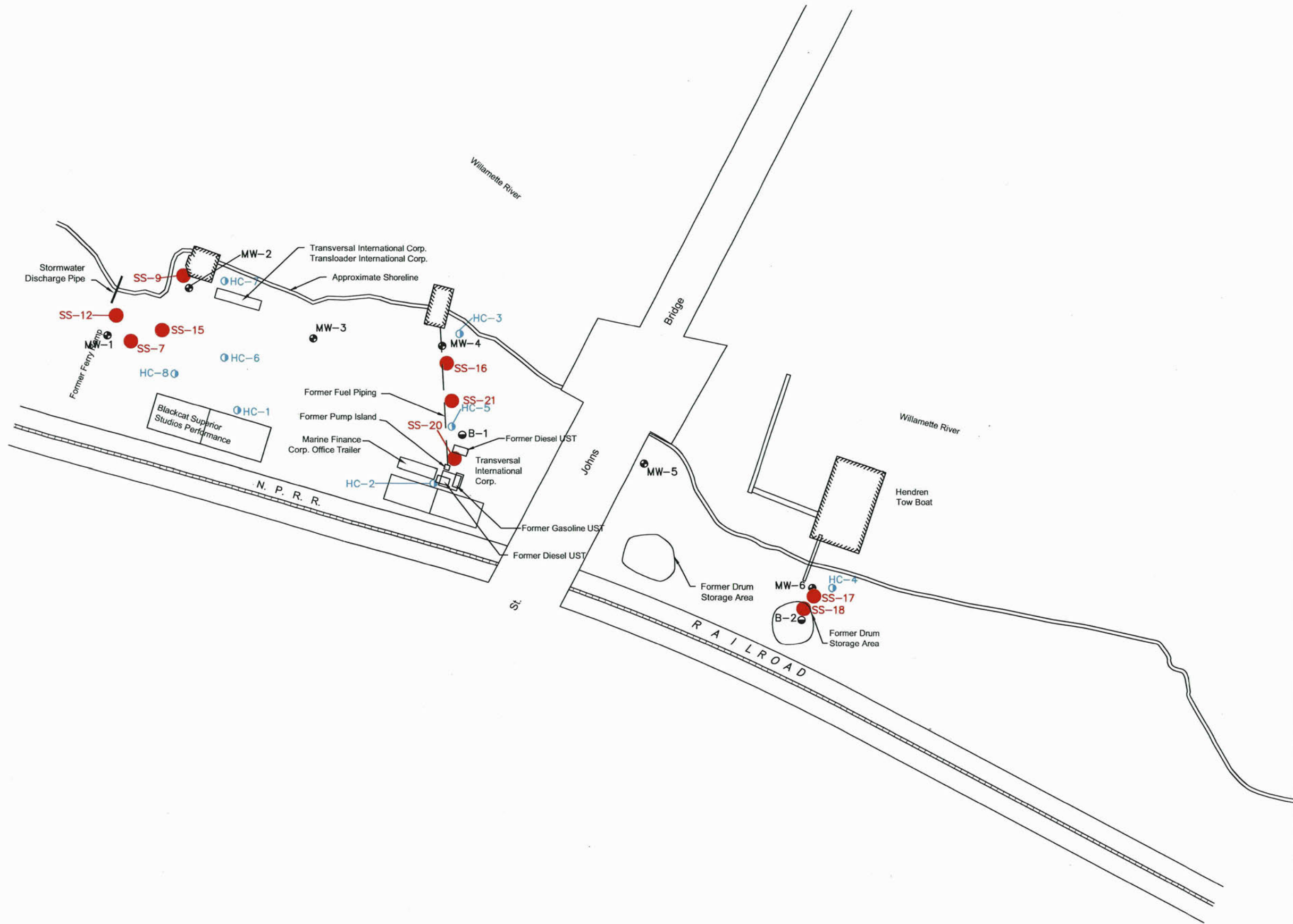
Advanced American Construction Properties
Portland, Oregon
Draft

- Legend:**
- 30-Foot Monitoring Well
 - 20-Foot Monitoring Well
 - Geotechnical Borings (Haut Crowser, December 4)
 - Railroad
 - Storage Areas
 - Docks/Piers
 - UST Former Underground Storage Tank
 - Areas Where Source Control Measures Were Required

Note:
Base map from drawings provided by Jacobs Engineering Group, Inc., Multnomah County Assessors Office and GEO Design, 2003.



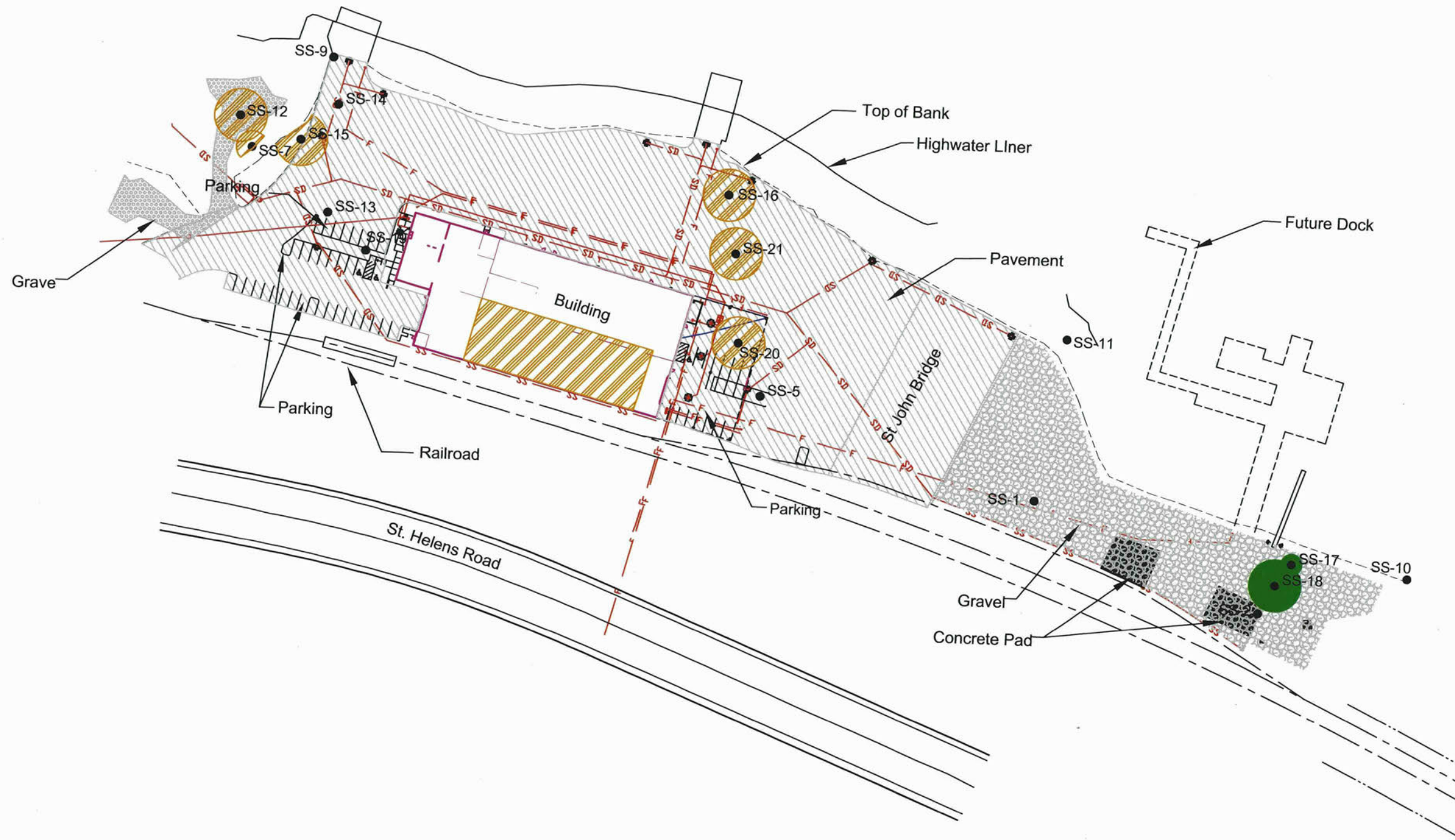
MAUL FOSTER ALONGI INC.
ENVIRONMENTAL & ENGINEERING CONSULTANTS
Vancouver, WA | Portland, OR | www.MFAinc.org



File: G:\0100.01 ADVANCED AMER CONSTRUCTION PROPERTIES, LLC\02 SITE DEVELOPMENT RPT\FIG3 SITE DEV LP AND UTIL PLAN DWG Last edited: AUG. 10. 2006 @ 5:10 p.m. by caduser Xrefs: Site Base 2005, Sample Base 2005, black

Figure 3
Site Development
and Utilities

Advanced American
Construction Properties, LLC
Portland, Oregon



Legend:

- Surface Soil Sample Location
- Areas That Were Capped in Place
- SD Stormwater Lines
- SS Sanitary Lines
- F Firewater Lines
- Pavement (At Least 6" of Rock and 4" of Asphalt and in Some Areas Underlain by Imported Fill)
- Gravel Underlain by Imported Fill
- Soil with concentrations exceeding source control criteria were excavated and placed the under building foundation (~535 cubic yards)

Note:
Base map from drawings provided by
Group Mackenzie on April 4, 2005.



0 120 240
FEET

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APPENDIX A
SITE PERMITS



PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave, Suite 5000
Portland, OR 97201



COMMERCIAL BUILDING PERMIT

05-108656-000-00-CO

Site Address: 8444 NW ST HELENS RD
8444 NW ST HELENS RD-SOUTH SIDE

Issued: 3/30/05

PROJECT INFORMATION		Occ. Group	Const. Type
Business	Demolition	F-1	V-B
Project Description: DEMO EXISTING BUILDING SOUTH SIDE OF PROPERTY AND RELATED SITE DEMOLITION PER PLANS			

APPLICANT	GROUP MACKENZIE *KATHY MÖRTEN*	Phone (503) 224-9560
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone
CONTRACTOR	PERLO MCCORMACK PACIFIC	Phone

Project Details		Project Details	
Code Edition (Year)	2003 IBC	Ground Disturbance?	Yes
Lot Area (Sq. Ft.)	122404	Water District	Portland Water Bur
Zoning - Property (1)	IHis		
		<i>MARY PAT GARDNER 503-823-7452</i> <i>MARY KIMS EROSION INSPECTOR</i> <i>CALL 503-823-6391 OFFICE 503-823-7321</i> <i>RUSSELL HILANDER EROSION INSPE. 503-823-7456</i>	

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7303.

BEFORE YOU DIG	ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 852-001-0010 through OAR 852-001-0030. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 1-800-332-2341).
-----------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

CITY CONTACT	PROCESS MANAGEMENT	Phone: 503-823-7357
E-Mail:		Fax: (503) 823-4172

INSPECTION REQUEST PHONE NUMBERS	Septic System Decommissioning - Call Before 6:00 AM: (503) 823-7388
	Building/Trade Inspections - Call Before 6:00 AM: (503) 823-7000
TDD: (503) 823-6868	
IVR Inspection Request Number:	2445371



City of Portland
Bureau of Development Services
Land Use Services Division

1900 SW Fourth Ave. Suite 5000
Portland, Oregon 97201
Telephone: 503-823-7300
TDD: 503-823-6868
FAX: 503-823-5630
www.bds.ci.portland.or.us

Date: May 24, 2005
To: Interested Person
From: Mike Liefeld, Land Use Services
503-823-7839

**NOTICE OF A TYPE II DECISION ON A PROPOSAL IN
YOUR NEIGHBORHOOD**

The Bureau of Development Services has approved a proposal in your neighborhood. The reasons for the decision are included in this notice. If you disagree with the decision, you can appeal it and request a public hearing. Information on how to appeal this decision is listed at the end of this notice.

CASE FILE NUMBER: LU 05-108668 GW

GENERAL INFORMATION

Applicant: Scott Burgess
Advanced American Construction
PO Box 1630
Oregon City, OR 97045

Representative: Preston Beck / Tom Wright
Group Mackenzie
690 SW Bancroft
Portland, OR 97239

Owner: Advanced American Construction Properties LLC
415 S McLoughlin Blvd
Oregon City, OR 97045

Site Address: 8444 NW ST HELENS RD

Legal Description: TL 100 1.53 ACRES, SECTION 11 1N 1W; TL 600 2.81 ACRES,
SECTION 11 1N 1W; TL 500 1.29 ACRES, SECTION 11 1N 1W

Tax Account No.: R961110240, R961110320, R961110410

State ID No.: 1N1W11DA 00100, 1N1W11 00600, 1N1W11 00500

Quarter Section: 2120, 2220

Neighborhood: Northwest Industrial, contact Ann Gardner at 503-417-2041

Business District: Northwest Industrial, contact Paul Pope at 503-778-6771

District Coalition: Neighbors West/Northwest, contact David Allred at 503-823-4288

Plan District: Guild's Lake Industrial

Zoning: IHis, Heavy Industrial zoning with River Industrial Greenway and
Scenic overlay zoning

Case Type: GW (Greenway Review)

Procedure: Type II, an administrative decision with appeal to the Hearings Officer

Proposal:

Advanced American Construction proposes to construct a building that includes a shop, office and warehouse activities, and make site improvements for the movement, storage, staging, and loading of marine-related machinery and equipment between barges and the facilities' upland staging areas. The new building will be approximately 37,225 square feet and the site will have a total of 50 new paved parking spaces. Paved and gravel exterior storage areas are proposed for marine construction materials. A combination of large metal treaded cranes and smaller rubber tire cranes will be used at the site to transfer materials from the upland storage areas to the barges moored along the site's river frontage. The greenway setback area, landward of the top of the bank, will be used as a crane maneuvering and a material staging area and will be asphalt and gravel surfaced. Additional landward moorage apparatus are proposed along the top of bank to secure barges and boats moored along the river. Grading will occur on the site to allow development within the floodplain and to create a relatively flat exterior storage area and safe equipment maneuvering area. Because alterations are proposed within and riverward of the greenway setback, the development is subject to a Greenway Review (33.440.310.B). Additionally, any development within and riverward of the greenway setback must be river-dependent or river-related, or it will be subject to additional review requirements.

The applicant submitted revised plans on May 17, 2005 that include additional development outside the greenway setback, additional paving for exterior storage, and a modified greenway landscape design. These plans are contained within Exhibits C.1.-C.12.

Relevant Approval Criteria:

In order to be approved, this proposal must comply with the approval criteria of Title 33. The approval relevant criteria are:

- 33.440.350, Greenway Review
- Willamette Greenway Design Guidelines

ANALYSIS

Site and Vicinity: The site is located along the Willamette River, beneath the St. Johns Bridge and east of St. Helens Rd (Hwy 30). The existing 7.4-acre industrial site consists of two quonset huts and unpaved exterior storage yards. A rail line is adjacent to the site to the west. At the north end of the site, an unpaved ramp leads towards the river to the location of a former ferry crossing. Along the riverbank, north of the St. Johns Bridge, are two short piers level with the existing top of bank. South of the St. Johns Bridge is a floating dock marina that is leased by a tow-boat company. Excluding the former ferry crossing area, the steep riverbank is dominated by rip rap, invasive plant species, and large pieces of wood and metal debris.

Other development in the vicinity along the Willamette River is primarily industrial in use and includes marine related uses such as towboat operators and petroleum transfer docks and tank farms.

Zoning: The site is zoned Heavy Industrial (IH) with River Industrial Greenway ("i") and Scenic ("s") overlay zoning. The site is also within the boundaries of the Guild's Lake Industrial Sanctuary plan district. The IH zone is one of three zones that implement the Industrial Sanctuary designation of the Comprehensive Plan. The IH zone provides land where a wide variety of industrial uses may locate, including those not desirable in other zones due to their objectionable impacts or appearance. The Guild's Lake Industrial Sanctuary plan district seeks to foster the preservation and growth of this premier industrial area, while preventing the expansion of inappropriate non-industrial uses. The Scenic Resources overlay zone is intended to protect Portland's significant scenic resources as identified in the Scenic Resources Protection Plan. This site lies within many view corridors meant to protect views of the St. Johns Bridge and the site contains height limitations of 100 feet and 125 feet.

The River Industrial Greenway overlay encourages and promotes the development of river-dependent and river-related industries which strengthen the economic viability of Portland as a marine shipping and industrial harbor, while also preserving and enhancing the riparian habitat and providing public access where practical. Only river-dependent or river-related uses

are allowed on sites with a River Industrial Greenway designation. According to the applicant, the proposed use is a business that provides marine construction services for primarily marine-related activities and complex underwater facilities, such as docks and piers, pipelines, outfall structures, communication cables, and bridge repair.

In addition, development, exterior alterations, excavations, or fills within and riverward of the greenway setback that are river-dependent or river-related may be allowed if approved through a greenway review. No buildings, structures, parking lots, or fills are to be located within or riverward of the greenway setback unless it can be shown to be necessary for the functioning of a river-dependent or river-related use. The development proposal for this river-dependent use includes excavation and fill, crane maneuvering and staging areas, and deadman anchors within and riverward of the greenway setback. The applicant asserts that the proposed development activities listed above are all river-dependent. According to the applicant, heavy and bulky marine related construction equipment and materials will frequently be transferred between barges and the upland site. A combination of mobile cranes (metal treaded and rubber wheel based) will be used to maneuver equipment from fabrication and storage areas on the site (located outside of the 25-foot greenway setback) to staging areas along the top-of-bank where they will be transferred to larger cranes that can make the reach to construction barges on the river. Because of the extraordinary weight of the equipment and fabricated materials and operational logistics of moving specialized equipment, a "first place of rest" or staging area within reach of the crane boom is necessary. Crane maneuvering and staging areas will be paved and graveled surfaced and will be approximately 40 feet wide measured landward from the top-of-bank. Because the finish floor elevation for the new warehouse must meet the floodway requirements and be 2 feet above the 100-year flood level, fill in and around the building pad will be necessary. According to the applicant, in order to maintain a low slope for heavy equipment moving up and down the ramps to the warehouse doors areas around the building will require fill. Finally, additional deadman anchors are proposed to secure barges and boats to the upland site. The anchors assist in securing barges and boats by allowing cables or large ropes to be tethered between the land and the barge or boat.

Based on this information, the proposed development activities listed above are found to be river-dependent and may be allowed if approved through a Greenway Review.

Land Use History: City records indicate that prior land use reviews include the following:

- CU 38-72: Approved Conditional Use Review for excavation and fill.
- GP 6-83: Approved Greenway Review for a modular office building, off street parking spaces, and greenway landscaping.
- GP 17-88: Approved Greenway Review to reinforce an existing wharf and to construct breasting platforms and deadman anchors.
- LUR 92-00245 MP: Approved Land Division Review for a 3-lot minor partition.
- LUR 92-00246 AD: Approved Adjustment Review to reduce the lot size for parcel 2 for LUR 92-00245 MP.

Agency Review: A "Notice of Proposal in Your Neighborhood" was mailed **February 25, 2205**. The following Bureaus have responded:

The Development Review Division of Portland Transportation has reviewed the proposal for conformance with adopted policies, street designations, applicable Title 33 approval criteria, Title 17, and for potential impacts upon transportation services. The Development Review Division of Portland Transportation has no objection to approval of the project, but recommends that the applicant contact the Oregon Department of Transportation and the railroad regarding access to Highway 30 and over the existing rail lines. Additional information is provided in Exhibit E.1

The Fire Bureau has reviewed the proposal for access and water supply issues at the site. The Fire Bureau notes that the applicant must meet the Fire Code prior to approval from the Fire Bureau for access and water supply issues during plan review. Additional information is provided in Exhibit E.2

Urban Forestry provided information about tree protection requirements and about street tree requirements for projects over \$25,000 in value. Additional information is provided in Exhibit E.3

The Site Development Section of BDS has provided information regarding the requirements of development within the floodway. Specifically, all development in the floodplain is subject to the applicable requirements of Chapter 24.50, Flood Hazards and the balanced cut and fill requirements. In addition, erosion control requirements found in Title 10 apply to both site preparation work and development. Information is also provided regarding stormwater treatment and disposal requirements. Additional information is provided in Exhibit E.4.

The Bureau of Environmental Services (BES) has reviewed the proposal and provided informational comments. Staff from BES note that stormwater management and industrial source control will be reviewed for consistency with the Stormwater Management Manual, during plan review. Staff from BES support the proposed planting area near the ferry crossing, but also suggest that the applicant consider removing invasive plants and improving landscaping along the riverbank. In order to increase habitat values along the riverbank, BES staff also suggests removing invasive plants and existing wood and metal debris along the riverbank. Additional information is provided in Exhibit E.5.

The Oregon Department of Transportation (ODOT) has provided information regarding ODOT requirements for a rail crossing permit and Highway 30 access permit. Additional information is provided in Exhibit E.6

Neighborhood Review: A Notice of Proposal in Your Neighborhood was mailed on **February 25, 2005**. No responses have been received from either the Neighborhood Association or notified property owners in response to the proposal.

ZONING CODE APPROVAL CRITERIA

33.440.350 Greenway Review Approval Criteria

The approval criteria for a greenway review have been divided by location or situation. The divisions are not exclusive; a proposal must comply with **all** of the approval criteria that apply to the site. A greenway review application will be approved if the review body finds that the applicant has shown that all of the approval criteria are met.

- A. For all greenway reviews:** The Willamette Greenway Design Guidelines must be met for all greenway reviews. The Willamette Greenway Design Guidelines address the quality of the environment along the river and require public and private developments to complement and enhance the riverbank area. The Design Guidelines are grouped in a series of eight Issues:

A complete description of the Design Guidelines and their applicability is provided in pages C-3 through C-49 of the *Willamette Greenway Plan*. Findings for the individual guidelines are included below.

Issue A. Relationship of Structures to the Greenway Setback Area: This issue "applies to all but river-dependent and river-related industrial use applications for Greenway Approval, when the Greenway Trail is shown on the property in the *Willamette Greenway Plan*." These guidelines call for complementary design and orientation of structures so that the greenway setback area is enhanced:

1. Structure Design
2. Structure Alignment

Issue B. Public Access: This issue "applies to all but river-dependent and river-related industrial use applications for Greenway Approval, when the Greenway Trail is shown on the property in the *Willamette Greenway Plan*." These guidelines call for integration of the Greenway Trail into new development, as well as the provision of features such as view points, plazas, or view corridors:

1. Public Access
2. Separation and Screening
3. Signage
4. Access to the Water's Edge

Findings: There is no Greenway Trail designation on the private property at the site. Also, the site is proposed for a new river-dependent industrial use that provides marine construction services for marine-related activities and underwater facilities, such as docks and piers, pipelines, outfall structures, communication cables, and bridge repair. For these reasons, guideline issues A and B do not apply.

Issue C. Natural Riverbank and Riparian Habitat: This issue "applies to situations where the river bank is in a natural state, or has significant wildlife habitat, as determined by the wildlife habitat inventory." These guidelines call for the preservation and enhancement of natural banks and areas with riparian habitat:

1. Natural Riverbanks
2. Riparian Habitat

Findings: The current riverbank along the site is not in a natural state and has been previously altered through the use of riprap bank stabilization. The *Lower Willamette River Wildlife Habitat Inventory (LWRWHI)* designated the site (Site 15.9a) in 1986 as having a Rank V habitat designation. Rank V sites consist primarily of heavy industrial uses with riprap banks, docks, and wharves. As a Rank V designation, the site is categorized as having little or no value for wildlife at the present time. According to the LWRWHI, Rank V sites have potential for wildlife enhancement and rehabilitation efforts should focus on replanting native species of trees and shrubs which will better serve wildlife needs. To the extent practical, the extensive riprap shores and degraded riparian habitat of Rank V sites should be enhanced for wildlife and aesthetic purposes while respecting existing river-dependent and river-related industrial uses and development.

The proposed project includes grading the entire 25-foot greenway setback area for crane operation and material staging areas. The crane operation and staging areas will be surfaced with a combination of heavy asphalt paving and gravel. Along the northern portion of the riverbank, a small amount of fill will be placed riverward of the existing top of bank in order to fill a small depression and create a flat, stable, and safe maneuvering area for crane operations. Along the southern portion of the site, the area south of the ODOT bridge right-of-way, the existing top of bank will be pulled back and raised approximately 5.6 feet to facilitate crane maneuvering. A combination of vertical, extruded, and flush mounted curbing will be placed at the top of bank to delineate the riverbank from the crane maneuvering area as well as reduce any transportation of sediments or other contaminants to the Willamette River during storm events.

As stated earlier, the existing riverbank has been previously altered through the use of riprap boulders, which has created a riverbank with an approximate slope of 25-30 percent along the entire site. Existing vegetation along the riverbank consists mostly of invasive plants, such as Himalayan blackberry. A fair amount of wood and metal debris is also present along the riverbank, such as large wood pilings and timbers near the ferry crossing ramp and a dilapidated half submerged metal pier located between the two existing piers.

Given the extremely limited 'natural state' of the existing riverbank and the operational requirements of the river-dependent use, the applicant has proposed practical landscaping in areas that will not interfere with crane operations and required site clearances for barge loading. Greenway plantings will include both greenway setback plantings and plantings riverward of the greenway setback. Greenway setback plantings will occur at the northern portion of the site and cover approximately 3,649 square feet of greenway area with a mixture of native overstory, understory, wildflowers, and grasses. The northern portion of the site will also include a 7,749 square feet

riprap planting zone of native live stake plantings within the existing riprap, at and below the ordinary high water line. The applicant has proposed a seed mixture of native wildflowers and rushes to be applied riverward of the top of bank along the site's entire riverfrontage. The addition of these planting areas will enhance the riparian area by providing woody species to provide food and cover for birds, mammals and other animals residing near or in the river. In order to address concerns raised by the Bureau of Environmental Services and to better ensure the success of the proposed plantings, all existing invasive plants should be removed from the riverbank. In addition, existing structures along the riverbank (timbers, dilapidated metal piers, etc.) should be removed to further improve these areas as fish habitat.

The riverbank adjacent to the proposed river-dependent use is not a natural riverbank, and the proposed landscaping provides practical habitat enhancements. With a condition of approval that the applicant removes all invasive plant species and wood and metal debris along the riverbank, practical greenway landscape enhancements are provided that respect the river-dependent use and development at the site. With this condition of approval, this guideline issue can be satisfied.

Issue D. Riverbank Stabilization Treatments: This guideline "applies to all applications for Greenway Approval." This guideline promotes bank treatments for upland developments that enhance the appearance of the riverbank, promote public access to the river, and incorporate the use of vegetation where possible:

1. Riverbank Enhancement

Findings: Because there is no greenway trail designation on the site, and because river-dependent industrial uses are exempt from providing public access, the portions of this guideline related to public access do not apply.

As stated previously, the site will host a use that provides marine construction services for primarily marine-related activities and complex underwater facilities, such as docks and piers, pipelines, outfall structures, communication cables, and bridge repair. The site will undertake grading activities necessary to provide safe and efficient crane maneuvering and staging areas at the top of the riverbank. Vertical, extruded, and flush mounted curbs will be installed along the top of bank to delineate river-dependent development from the riverbank. The applicant is proposing to manipulate the top-of-bank at the site by raising the elevation by 1 to 3.5 feet along portions of the northern riverbank and by 5.6 feet along the southern riverbank. Where the elevation of the top-of-bank will be raised, dirt/topsoil will be backfilled against the proposed curbing. The proposed backfill will enhance the natural state of the existing riverbank and will provide an appropriate growing medium for the greenway landscaping discussed above. Although not specifically illustrated on the proposed landscape plan, the greenway seeding is intended to be applied riverward of the new top-of-bank curbing. The proposed seeding will act to reinforce the 2 to 1 backfilled dirt/top soil slope riverward of the new curbing. While not shown directly on the proposed landscape plan, a condition of approval is necessary to ensure that all backfilled areas riverward of the top of bank receive the proposed greenway seed treatment. Through the condition of approval under Issue C above and the condition noted here, the project will provide practical landscape enhancements to improve the appearance of the riverbank. With these conditions, this guideline can be satisfied.

Issue E. Landscape Treatments: This issue "applies to all applications for Greenway Approval which are subject to the landscape requirements of the Greenway chapter of Title 33 Planning and Zoning of the Portland Municipal Code." These guidelines call for landscaping treatments that create a balance between the needs of both human and wildlife populations:

1. Landscape Treatment
2. Grouping of Trees and Shrubs
3. Transition

Findings: Landscaping must be provided to conserve or re-establish vegetative cover within or riverward of the greenway setback. Landscape treatments are intended to create an environment which recognizes both human and wildlife use. The greenway landscape standards found in 33.440.230, require a minimum amount of trees, shrubs, and ground cover based on the lineal river frontage for a site. Minimum landscape treatments are not required where they will significantly interfere with a river-dependent or river-related use or development. Except for the northern portion of the site, the proposed river-dependent use includes river-dependent development (crane maneuvering and material staging) along the site's entire river frontage. During the transfer of upland materials to barges, crane operators and ground crews must maintain visibility for safe operations. In addition, clearances must be maintained so equipment and materials do not face obstructions during their transfer between land and the river below. These conditions preclude the ability to provide the minimum greenway vegetation riverward of the top of bank and below the crane maneuvering and staging areas. In light of this, the applicant has proposed a mixture of low growing native wildflowers and rushes, along the riverbank below the river dependent development areas. Along the northern portion of the riverbank and greenway setback area, the applicant proposes landscaping that includes a native mixture of overstory and understory plants, wildflowers, and grasses. Live stake willow cuttings will be planted within the existing riprap along the northern riverbank. The overall proposed greenway planting area on the site is approximately 24,196 square feet. Through the use of the proposed plantings, subject to the conditions listed above, this guideline will be satisfied.

Issue F. Alignment of Greenway Trail: This issue "applies to all applications for Greenway Approval with Greenway Trail shown on the property in the Willamette Greenway Plan." These guidelines give direction in the proper alignment of the greenway trail and call for consideration of habitat protection, the physical features of the site and the necessity of maintaining year-round use of the trail:

1. Year-Round Use
2. Habitat Protection
3. Alignment

Issue G. Viewpoints: This issue "applies to all applications for Greenway Approval with a public viewpoint shown on the property in the *Willamette Greenway Plan* and for all applications proposing to locate a viewpoint on the property. These guidelines provide direction about the features and design of viewpoints, as required at specific locations:

1. Design
2. Facilities
3. Access to Water's Edge
4. Relationship to Trail

Issue H. View Corridors: This issue "applies to all applications for Greenway Approval with a view corridor shown on the property in the *Willamette Greenway Plan*". These guidelines provide guidance in protecting view corridors to the river and adjacent neighborhoods.

1. Right-of-way Protection
2. View Protection
3. Landscape Enhancement

Findings: There are no Greenway Trail, (Greenway) Public Viewpoints, or (Greenway) View Corridors shown on the property in the *Willamette Greenway Plan*. For these reasons, guideline issues F, G and H do not apply.

SUMMARY FINDINGS for 33.440.350.A - Greenway Design Guidelines: Based on the foregoing, guideline issues A, B, F, G, and H do not apply. Guideline issues C, D and E are or will be met with the noted condition. Accordingly, this criterion can be met.

- B. River frontage lots in the River Industrial zone.** In the River Industrial zone, uses that are not river-dependent or river-related may locate on river frontage lots when the site is found to be unsuitable for river-dependent or river-related uses. Considerations include such constraints as the size or dimensions of the site, distance or isolation from other river-dependent or river-related uses, and inadequate river access for river-dependent uses.

Findings: The site is within the River Industrial overlay zone and the proposed use is found to be river-dependent as it provides marine construction services for primarily marine-related activities and complex underwater facilities, such as docks and piers, pipelines, outfall structures, communication cables, and bridge repair. Because the proposed use of the site is consistent with the purpose of the River Industrial overlay zone, this criterion does not apply.

- C. Development within the River Natural zone.** The applicant must show that the proposed development, excavation, or fill within the River Natural zone will not have significant detrimental environmental impacts on the wildlife, wildlife habitat, and scenic qualities of the lands zoned River Natural. The criterion applies to the construction and long-range impacts of the proposal and to any proposed mitigation measures. Excavations and fills are prohibited except in conjunction with approved development or for the purpose of wildlife habitat enhancement, riverbank enhancement, or mitigating significant riverbank erosion.
- D. Development on land within 50 feet of the River Natural zone.** The applicant must show that the proposed development or fill on land within 50 feet of the River Natural zone will not have a significant detrimental environmental impact on the land in the River Natural zone.

Findings: The nearest area with the River Natural ("n") overlay zoning designation is approximately 1 mile away, across the river and along the banks and bluffs below N. Willamette Boulevard near the Willamette railroad bridge. Since no work is proposed in or within 50 feet of land within the River Natural overlay zone, criterion C and D do not apply.

- E. Development within the greenway setback.** The applicant must show that the proposed development or fill within the greenway setback will not have a significant detrimental environmental impact on Rank I and II wildlife habitat areas on the riverbank. Habitat rankings are found in the *Lower Willamette River Wildlife Habitat Inventory*.

Findings: The nearest Rank I or II wildlife habitat areas are approximately 1 mile upstream and 1 mile downstream of the project area. The project will not impact the riverbank below the ordinary high water line and the existing riverbank conditions will be enhanced through greenway plantings, as described above. Since the existing greenway conditions will be enhanced, the proposed work is expected to have few, if any, detrimental impacts on Rank I and Rank II areas in the vicinity. Therefore, this criterion is met.

F. Development riverward of the greenway setback.

1. The proposal will not result in the significant loss of biological productivity in the river;
2. The riverbank will be protected from wave and wake damage;
3. The proposal will not:
 - a) Restrict boat access to adjacent properties;
 - b) Interfere with the commercial navigational use of the river, including transiting, turning, passing, and berthing movements;
 - c) Interfere with fishing use of the river;
 - d) Significantly add to recreational boating congestion;
4. The request will not significantly interfere with beaches that are open to the public.

Findings: As noted earlier, the existing top-of-bank will be raised along the site's river frontage to create an operable crane maneuvering and material staging area. Vertical, extruded, and flush mounted curbs will be installed at the new top of bank elevation and

dirt/topsoil will be backfilled, with a maximum slope of 2 to 1, riverward of the new top of bank. The proposed grading does not involve any in-water work and appropriate erosion control measures will be employed on site. The proposal includes greenway plantings within the greenway setback and riverward of the setback that are likely to improve the biological productivity of the river. The proposed grading and manipulation of the existing top of bank will occur 5 to 8 feet above the ordinary high water line. Existing riverbank treatments (i.e. rip rap) at and below the ordinary high water line will remain and continue to protect the bank from wave and wake damage. The proposed development and landscape enhancements are limited to areas that will not impact boat access, create boating congestion, or interfere with the navigational use of the river. There are presently no amenities for fishing or beach access on the site, and no changes to this current state are proposed. Therefore, on a whole, the proposal is expected to meet this criterion.

- G. Development within the River Water Quality overlay zone setback.
- H. Mitigation or remediation plans.

Findings: No activity occurs within the River Water Quality ("q") overlay zone, since the site is within the River Industrial ("i") overlay zone. Mitigation or remediation plans are only required by the approval criteria specific to development within the River Water Quality overlay zone, and therefore the requirement for such plans is not triggered by this case. For these reasons, criteria G and H do not apply.

DEVELOPMENT STANDARDS

Unless specifically required in the approval criteria listed above, this proposal does not have to meet the development standards in order to be approved during this review process. The plans submitted for a building or zoning permit must demonstrate that all development standards of Title 33 can be met, or have received an Adjustment or Modification via a land use review prior to the approval of a building or zoning permit.

CONCLUSIONS

The applicant proposes to construct a building, which will include a shop, office and warehouse activities, and make improvements to the existing site for the movement, storage, staging, and loading of marine-related machinery and equipment directly between floating barges and the facilities' staging areas. A combination of large metal treaded cranes and smaller rubber tire cranes will be used at the site to transfer materials from the upland storage area to the barges moored along the site's river frontage. The Greenway Setback area landward of the top of the bank is proposed as a crane maneuvering and material staging area and will be asphalt and gravel surfaced. The development proposal includes 24,196 square feet of greenway landscaping, including greenway setback overstory and understory landscaping, rip rap planting zones, and riverbank seeding areas. The riverbank abutting this industrial site is not a natural riverbank and the proposal includes landscaping that improves existing conditions and enhances the riparian habitat along the Willamette River.

As noted in the findings throughout this report, and with the implementation of the noted conditions, the proposal is expected to meet the applicable criteria, and should therefore be approved.

ADMINISTRATIVE DECISION

Approval of river-dependent development and greenway landscaping associated with a new marine construction business, per the approved site plans, Exhibits C-1 through C-12, signed and dated May 23, 2005, subject to the following conditions:

- A. As part of the building permit application submittal, the following development-related conditions (B and C) must be noted on each of the 4 required site plans or included as a sheet in the numbered set of plans. The sheet on which this information appears must be labeled "ZONING COMPLIANCE PAGE - Case File LU 05-108668 GW." All requirements must be graphically represented on the site plan, landscape, or other required plan and must be labeled "REQUIRED."
- B. The applicant shall remove all invasive plant species from the riverbank. In addition, all wood and metal debris present along the riverbank, such as large wood pilings and timbers near the ferry crossing ramp and a dilapidated, half submerged metal pier structure located between the two existing piers, shall be removed.
- C. The greenway seeding zone shall be applied to all backfilled dirt/top soil areas abutting the proposed top of bank curbing. The greenway seeding zone shall begin directly riverward of the top of bank curbing and continue riverward to the extent shown on Exhibit C.8.

Staff Planner: Mike Liefeld

Decision rendered by: Rebecca Esau on May 23, 2005.
By authority of the Director of the Bureau of Development Services

Decision mailed: May 24, 2005

About this Decision. This land use decision is **not a permit** for development. Permits may be required prior to any work. Contact the Development Services Center at 503-823-7310 for information about permits.

Procedural Information. The application for this land use review was submitted on February 11, 2005, and was determined to be complete on February 25, 2005.

Zoning Code Section 33.700.080 states that Land Use Review applications are reviewed under the regulations in effect at the time the application was submitted, provided that the application is complete at the time of submittal, or complete within 180 days. Therefore this application was reviewed against the Zoning Code in effect on February 11, 2005.

ORS 227.178 states the City must issue a final decision on Land Use Review applications within 120-days of the application being deemed complete. The 120-day review period may be waived or extended at the request of the applicant. In this case, the applicant requested that the 120-day review period be extended by 56 days as stated in Exhibits F.3 through F.5.

Some of the information contained in this report was provided by the applicant. As required by Section 33.800.060 of the Portland Zoning Code, the burden of proof is on the applicant to show that the approval criteria are met. The Bureau of Development Services has independently reviewed the information submitted by the applicant and has included this information only where the Bureau of Development Services has determined the information satisfactorily demonstrates compliance with the applicable approval criteria. This report is the decision of the Bureau of Development Services with input from other City and public agencies.

Conditions of Approval. This approval may be subject to a number of specific conditions, listed above. Compliance with the applicable conditions of approval must be documented in all related permit applications. Plans and drawings submitted during the permitting process must illustrate how applicable conditions of approval are met. Any project elements that are specifically required by conditions of approval must be shown on the plans, and labeled as such.

These conditions of approval run with the land, unless modified by future land use reviews. As used in the conditions, the term "applicant" includes the applicant for this land use review, any person undertaking development pursuant to this land use review, the proprietor of the

use or development approved by this land use review, and the current owner and future owners of the property subject to this land use review.

Appealing this decision. This decision may be appealed to the Hearings Officer, which will hold a public hearing. Appeals must be filed **by 4:30 PM on June 7, 2005** at 1900 SW Fourth Ave. Appeals can be filed on the first floor in the Development Services Center until 3 p.m. After 3 p.m., appeals must be submitted to the receptionist at the front desk on the fourth floor. **An appeal fee of \$250 will be charged.** The appeal fee will be refunded if the appellant prevails. Recognized neighborhood associations are not subject to the appeal fee. Low-income individuals appealing a decision for their personal residence that they own in whole or in part may qualify for an appeal fee waiver. In addition, an appeal fee may be waived for a low income individual if the individual resides within the required notification area for the review, and the individual has resided at that address for at least 60 days. Assistance in filing the appeal and information on fee waivers is available from BDS in the Development Services Center. Fee waivers for low-income individuals must be approved prior to filing the appeal; please allow 3 working days for fee waiver approval. Please see the appeal form for additional information.

The file and all evidence on this case are available for your review by appointment only. Please contact the receptionist at 503-823-7702 to schedule an appointment. I can provide some information over the phone. Copies of all information in the file can be obtained for a fee equal to the cost of services. Additional information about the City of Portland, city bureaus, and a digital copy of the Portland Zoning Code is available on the internet at www.ci.portland.or.us.

Attending the hearing. If this decision is appealed, a hearing will be scheduled, and you will be notified of the date and time of the hearing. The decision of the Hearings Officer is final; any further appeal must be made to the Oregon Land Use Board of Appeals (LUBA) within 21 days of the date of mailing the decision, pursuant to ORS 197.620 and 197.830. Contact LUBA at 550 Capitol St. NE, Salem, Oregon 97310 or phone 1-503-373-1265 for further information.

Failure to raise an issue by the close of the record at or following the final hearing on this case, in person or by letter, may preclude an appeal to the Land Use Board of Appeals (LUBA) on that issue. Also, if you do not raise an issue with enough specificity to give the Hearings Officer an opportunity to respond to it, that also may preclude an appeal to LUBA on that issue.

Recording the final decision.

Before the applicant can proceed with their project, the final Land Use Review decision must be recorded with the Multnomah County Recorder. A building or zoning permit will be issued only after the final decision is recorded. The final decision may be recorded on or after **June 8, 2005**.

The applicant, builder, or a representative may record the final decision as follows:

- By Mail: Send the two recording sheets (sent in separate mailing) and the final Land Use Review decision with a check made payable to the Multnomah County Recorder to: Multnomah County Recorder, P.O. Box 5007, Portland OR 97208. The recording fee is identified on the recording sheet. Please include a self-addressed, stamped envelope.
- In Person: Bring the two recording sheets (sent in separate mailing) and the final Land Use Review decision with a check made payable to the Multnomah County Recorder to the County Recorder's office located at 501 SE Hawthorne Boulevard, #158, Portland OR 97214. The recording fee is identified on the recording sheet.

For further information on recording, please call the County Recorder at 503-988-3034. For further information on your recording documents please call the Bureau of Development Services Land Use Services Division at 503-823-0625.

Expiration of this approval. This approval expires three years from the date the final decision is rendered unless a building permit has been issued, or the approved activity has begun.

Applying for your permits. A building permit, occupancy permit, or development permit must be obtained before carrying out this project. At the time they apply for a permit, permittees must demonstrate compliance with:

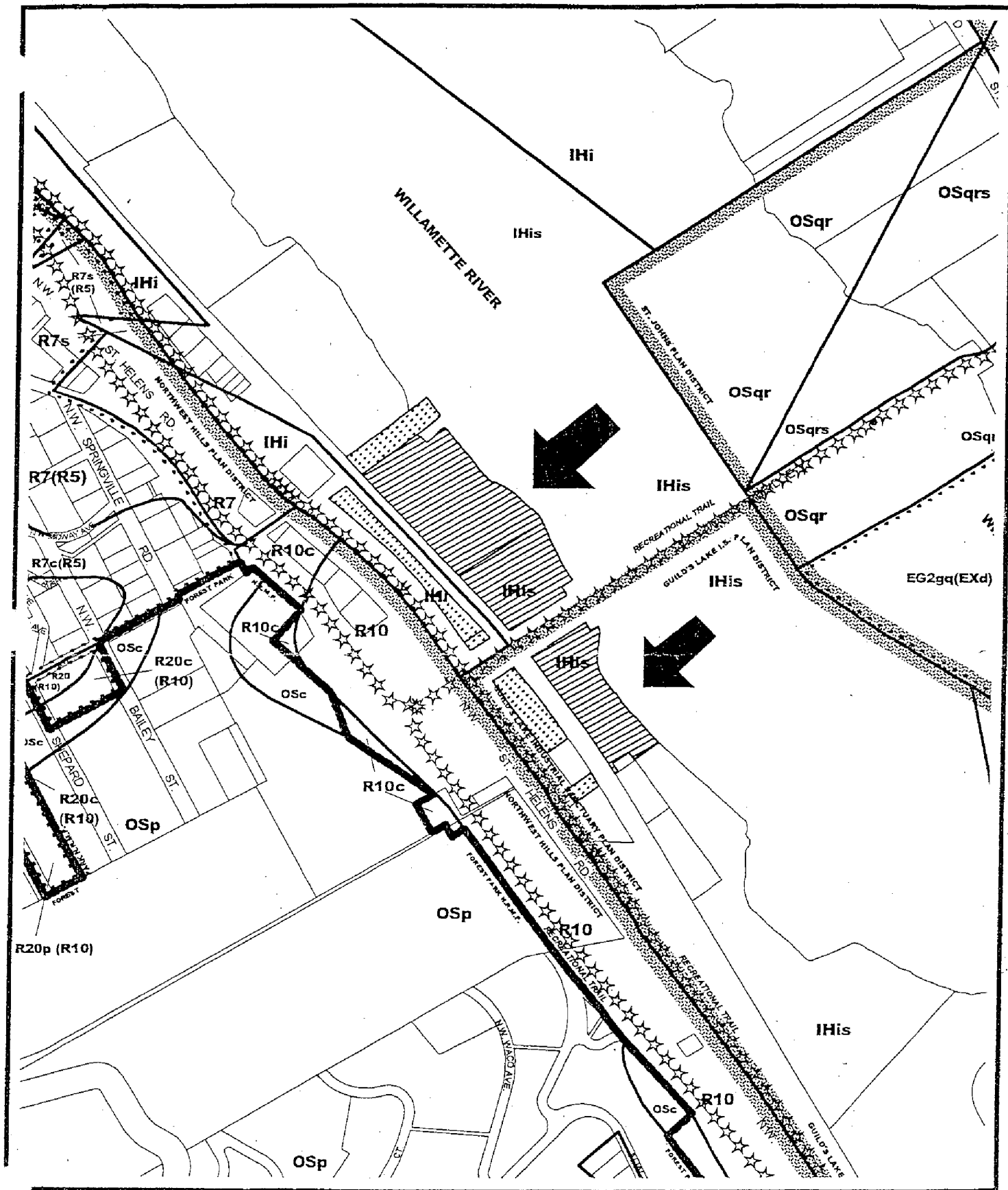
- All conditions imposed here.
- All applicable development standards, unless specifically exempted as part of this land use review.
- All requirements of the building code.
- All provisions of the Municipal Code of the City of Portland, and all other applicable ordinances, provisions and regulations of the City.

EXHIBITS

NOT ATTACHED UNLESS INDICATED

- A. Applicant's Statement
 - 1. Original
 - 2. Revised
- B. Zoning Map (attached)
- C. Plans/Drawings:
 - 1. Revised Site Plan North (attached)
 - 2. Revised Site Plan South (attached)
 - 3. Revised Grading Plan North
 - 4. Revised Grading Plan South
 - 5. Revised Utility Plan
 - 6. Revised Erosion Control Plan
 - 7. Curb and Stormwater Detail Sheets (3)
 - 8. Revised Planting Plan (attached)
 - 9. Planting and Irrigation Details
 - 10. Landscape Specifications
 - 11. Crane Maneuvering and Staging Site Plan (attached)
 - 12. Crane Loading Detail
- D. Notification information:
 - 1. Mailing list
 - 2. Mailed notice
- E. Agency Responses:
 - 1. Bureau of Transportation Engineering and Development Review
 - 2. Fire Bureau
 - 3. Bureau of Parks, Forestry Division
 - 4. Site Development Review Section of BDS
 - 5. Bureau of Environmental Services
 - 6. Oregon Department of Transportation
- F. Correspondence:
 - 1. March 11, 2005, Wetland Land Use Notification Form
 - 2. Letter from Scott Burgess, March 9, 2005, regarding stormwater outfall requirements
 - 3. Email from applicant placing LU on "hold", received March 21, 2005
 - 4. Email from applicant extending LU "hold", received March 24, 2005
 - 5. Email from applicant removing LU "hold", received May 17, 2005
 - 6. Email from applicant, received May 20, 2005, regarding greenway fill and landscaping
- G. Other:
 - 1. Original LU Application
 - 2. Site History Research

The Bureau of Development Services is committed to providing equal access to information and hearings. If you need special accommodations, please call 503-823-7702 (TTY 503-823-6868).



ZONING

 Site

 Property also owned

File No. LU 05-108668 GW

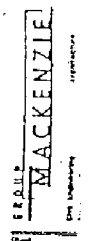
1/4 Section 2220 , 2120

Scale 1 inch = 400 feet

State-Id 1N1W11 600+



This site lies within the:
GUILD'S LAKE INDUSTRIAL SANCTUARY PLAN DISTRICT



NEW FACILITY
ADVANCED IN
CONSTRUCTION

Frank Mackenzie
Engineers, Inc.
1110 1st Avenue
New York, New York 10017
Phone (212) 850-1111
FAX (212) 850-1111

Frank Mackenzie
Engineers, Inc.
1110 1st Avenue
New York, New York 10017
Phone (212) 850-1111
FAX (212) 850-1111



ASCE
1801 Alexander Bell Drive
Reston, Virginia 20191-4400
Phone (703) 295-6000
FAX (703) 295-6001

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Phone (703) 295-6000
FAX (703) 295-6001

C2.1a

20-40378

20-4037

LU 05-108668 6-W
EXHIBIT 2, 11

[illegible]

18812

MACKENZIE

Architectural
Interior Design
Landscape Architecture

Cell Engineering
Mechanical Engineering
Transportation Engineering

Project:
**NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.**

Architectural Designer:
STURGEON ENGINEERING, INC.
4545 NE Lake Road
Portland, Oregon 97218
Phone: (503) 281-1100
Fax: (503) 281-9029

Landscape Architect:
WILSON SHAPIRO & ASSOCIATES, INC.
215 NW 12th, Suite 2
Portland, Oregon 97209
Phone: (503) 222-1111
Fax: (503) 222-1111

REGISTERED

DOUGLAS R. JOHNSON
Professional Engineer
State of Oregon
No. 12345
Exp. 12/31/2000

BY **DOUGLAS R. JOHNSON**
Professional Engineer
State of Oregon
No. 12345
Exp. 12/31/2000

PLANTING
PLAN

DATE: 11/11/00
SCALE: AS SHOWN
SHEET NO. 11
PROJECT NO. 00-0378-01

APPROVED BY:

DOUGLAS R. JOHNSON
Professional Engineer
State of Oregon
No. 12345
Exp. 12/31/2000

L11

20-0378-01



PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave, Suite 5000
Portland, OR 97201



COMMERCIAL BUILDING PERMIT

05-108646-000-00-CO

Site Address: 8444 NW ST HELENS RD
8444 NW ST HELENS RD-NORTH SIDE

Issued: 3/30/05

PROJECT INFORMATION		Occ. Group	Const. Type
Business		F-1	V-B
Demolition			
Project Description: DEMO EXISTING BUILDING ON THE NORTH SIDE OF PROPERTY AND RELATED SITE DEMOLITION PERMIT PLANS			

APPLICANT	GROUP MACKENZIE "KATHY MORTEN"	Phone (503) 224-9560
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone
CONTRACTOR	PERLO MCCORMACK PACIFIC	Phone

Project Details		Project Details	
Code Edition (Year)	2003 IBC	Ground Disturbance?	Yes
Lot Area (Sq. Ft.)	122404	Water District	Portland Water Bur
Zoning - Property (1)	IHIS		

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7303.

**BEFORE
YOU DIG:**

ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 832-001-0010 through OAR 832-001-0014. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 1-800-332-4344).

CITY CONTACT

PROCESS MANAGEMENT

Phone: 503-823-7357

Fax: (503) 823-4172

E-Mail:

**INSPECTION REQUEST
PHONE NUMBERS**

Septic System Decommissioning - Call Before 6:00 AM:
Building/Trade Inspections - Call Before 6:00 AM:

(503) 823-7368
(503) 823-7000

TDD: (503) 823-6868

IVR Inspection Request

Number:

2445359



CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave, Suite 5000
Portland, OR 97201



COMMERCIAL BUILDING PERMIT

05-113640-GRD-01-CO

Site Address: 8444 NW ST HELENS RD

Issued: 7/20/05

ADVANCED AMERICAN CONSTRUCTION

PROJECT INFORMATION		Occ. Group	Const. Type
Factory/Industrial	New Construction		
Project Description: PARTIAL GRADING PERMIT. No site utilities under this permit.			

APPLICANT	Group MacKenzie Architects "Scott Moore"	Phone (503) 224-9560
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone
CONTRACTOR	PERLO MCCORMACK PACIFIC	Phone

Project Details		Project Details	
Code Edition (Year)	2003 IBC	Ground Disturbance Area (Sq. Ft.)	245000
Lot Area (Sq. Ft.)	122404	Main Building Permit Fee	9501
SI-Soils	Yes	Water District	Portland Water Bur
Zoning - Property (1)	IH15		

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7303.

BEFORE YOU DIG ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 837-001-0010 through OAR 837-001-0090. You may obtain copies of the rules by calling the Center. (Note: the telephone number for the Oregon Utility Notification Center is 1-800-332-7314).

CITY CONTACT	PROCESS MANAGEMENT	Phone: 503-823-7357
E-Mail:		Fax: (503) 823-4172

INSPECTION REQUEST PHONE NUMBERS	Building/Trade Inspections • Call Before 6:00 AM:	(503) 823-7000
TDD: (503) 823-6868		
IVR Inspection Request Number:	2450599	



CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave, Suite 5000
Portland, OR 97201



ELECTRICAL PERMIT

05-147033-000-00-ET

Site Address: 8444 NW ST HELENS RD

Issued: 8/1/05

ADVANCED AMERICAN CONSTRUCTION

PROJECT INFORMATION		Occ. Group	Consl. Type
Commercial/Multifamily	New Construction		
Project Description: SERVICES, CKTS & LOW VOLTAGE			

APPLICANT	CURRENT ELECTRICAL CONST CO	Phone (503) 245-5997
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone
CONTRACTOR	CURRENT ELECTRICAL CONSTR CO INC 'DANIEL/LYNN OBRIEN'	Phone

Project Details	Project Details
Branch Circuit with Svc/Fdr 105	Contractor's Job# A25104
Ltd Energy Panel/Signal Circuits 5	Permanent Service over 225 amps? Yes
Svc/Fdr Over 1,000 amps/volts 1	Svc/Fdr, 201 to 400 amps 5.01 to 15 kv 3
Svc/Fdr, 401 to 600 amps 15.01 to 25 kV 4	

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days. For one and two-family permits call 503-823-7399. For commercial and multi-family residential permits, call 503-823-7304.

**BEFORE
YOU DIG**

ATTENTION: Before you dig, call 800-451-7246 or 503-823-7304 to locate underground utilities. It is the responsibility of the digger to locate and mark all underground utilities. If you are not sure, call 800-451-7246 or 503-823-7304. If you are not sure, call 800-451-7246 or 503-823-7304. If you are not sure, call 800-451-7246 or 503-823-7304.

CITY CONTACT

E-Mail:

Phone:

Fax: (503) 823-4172

**INSPECTION REQUEST
PHONE NUMBERS**

TDD: (503) 823-6868

Building/Trade Inspections - Call Before 6:00 AM:

(503) 823-7000

IVR Inspection Request

Number:

2484580



CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES

1900 SW 4th Ave, Suite 5000

Portland, OR 97201

STEVE ANDREWS 503-2132



COMMERCIAL BUILDING PERMIT **DANIV**

05-113640-000-00-CO

Site Address: 8444 NW ST HELENS RD

Issued: 8/16/05

ADVANCED AMERICAN CONSTRUCTION

PROJECT INFORMATION		Occ. Group	Const. Type
Factory/Industrial	Now Construction	B S-1 F-2	III-B
Project Description: NEW OFFICE AND MANUFACTURING BUILDING AND STORAGE YARD - GREENWAY REVIEW REQUIRED (existing structures demo'd under separate permits)			

APPLICANT	Group MacKenzie Architects "Scott Moore"	Phone (503) 224-9560
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone
CONTRACTOR	PERLO MCCORMACK PACIFIC	Phone

Project Details		Project Details	
Code Edition (Year)	2003 IBC	DS-Attachment of Equipment	Yes
DS-Fireproofing - Deferred	Yes	DS-Steel Joists	Yes
DS-Steel Stairs/Handrails	Yes	FEMA Elevation Certificate Required?	Yes
Ground Disturbance Area (Sq. Ft.)	1	Ground Disturbance?	Yes
Lot Area (Sq. Ft.)	122404	Number of Stories	2
Number of parking spaces added	53	Proposed # of new parking spaces	53
SI-Anchors - Adhesive	Yes	SI-Anchors - Cast in Place	Yes
SI-Anchors - Expansion	Yes	SI-Fireproofing	Yes
SI-Reinforced Concrete	Yes	SI-Solls	Yes
SI-Structural Observation	Yes	SI-Structural Steel	Yes
Smoke Detectors Required?	Yes	Sprinklers?	Y

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7303.

BEFORE YOU DIG ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. These rules are set forth in OAR 851-001-0010 through OAR 851-001-0020. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 1-800-333-7344).

CITY CONTACT	Peterson, Andy	Phone: 503-823-7751
E-Mail:	anpeterson@ci.portland.or.us	Fax: (503) 823-4172

INSPECTION REQUEST PHONE NUMBERS	Building/Trade Inspections - Call Before 6:00 AM: (503) 823-7000
TDD: (503) 823-6868	
IVR Inspection Request Number:	2450506

Handwritten notes:
FIBS #220 CONC. REINFORCE
220 FRAMING 279
220 ROOFING 245
220 STAIRS 275



CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave, Suite 5000
Portland, OR 97201



PLUMBING PERMIT

05-152660-000-00-PT

Site Address: 8444 NW ST HELENS RD
8444 ST HELENS RD

Issued: 8/17/05

PROJECT INFORMATION		Occ. Group	Const. Type
Commercial/Multifamily	Now Construction		
Project Description: SAN/STRM/WATER LINES			
APPLICANT	WILLIAMS & RYAN CONSTRUCTION LLC	Phone: (503) 350-1882	
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone	
CONTRACTOR	WILLIAMS & RYAN CONSTRUCTION	Phone	
Project Details		Project Details	
Now Exterior Installation?	Yes	Occupancy Group - PT	Commercial/Industrial
Sanitary Sewer # of Feet	300	Storm Sewer # of Feet	1700
Water Service # of Feet	1400		
FLOOD PLAIN 100 YEAR			
This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days. For one and two-family permits call 503-823-7388. For commercial and multi-family residential permits, call 503-823-7302.			
BEFORE YOU DIG	ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Regulation Center. These rules are set forth in OAR 812-004-0010 through OAR 812-004-0410. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Regulation Center is 1-800-312-2244).		
CITY CONTACT		Phone:	
E-Mail:		Fax: (503) 823-4172	
INSPECTION REQUEST PHONE NUMBERS		Building/Trade Inspections - Call Before 6:00 AM; (503) 823-7000	
TDD: (503) 823-6868			
IVR Inspection Request Number:		2490282	



CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave, Suite 5000
Portland, OR 97201



BES - SEWER CONNECTION PLUMBING PERMIT

05-152658-000-00-UC

Site Address: 8444 NW ST HELENS RD

Issued: 8/17/05

ADVANCED AMERICAN CONSTRUCTION

PROJECT INFORMATION		Occ. Group	Const. Type
Commercial			
Now Connection			
Project Description: Sanitary: 174" of 30" CSP Sanitary in Public Easement north of St Helens Rd. BOM to install 6" Tap in manhole & Contractor to install 6" branch from tap to property per rules of connection. Sewer Manhole approx. 12.5' Deep. Contractor to verify location & depth of tap & connection in field.			
APPLICANT	WILLIAMS & RYAN CONSTRUCTION LLC	Phone	(503) 350-1882
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone	
CONTRACTOR	WILLIAMS & RYAN CONSTRUCTION	Phone	
Project Details		Project Details	
BOM Taps Connection in Right of Way?		Connection Type Sanitary	
1 Yes			

The permittee shall abide by the "RULES FOR SEWER CONNECTION". By doing work under this permit, the permittee acknowledges that he or she has read and understood these rules. The rules are available where sewer permits are issued. The use of o-ring type connectors or "doughnuts" will no longer be permitted, and an elastomeric transition or other approved connection/transition shall be made.

**BEFORE
YOU DIG**

ATTENTION: Digging without a permit is a violation of the City of Portland's Public Works Code. The rules are available in OAR 823-001-0010 through our website www.portland.gov. You may obtain copies of the rules by calling the center. Please use the phone number for the Oregon Utility Notification Center at (503) 412-2214.

CITY CONTACT

E-Mail:

Phone:

Fax: (503) 823-4172

**INSPECTION REQUEST
PHONE NUMBERS**

TDD: (503) 823-6868

IVR Inspection Request
Number:

2490280

Bureau of Maintenance Taps - 24 Hour Notice Required: (503) 823-1700
Right of Way - 4 Hour Notice Required: (503) 823-7002
Sewer Permit Inspections - Call Before 6:00 AM: (503) 823-7302
Building/Trade Inspections - Call Before 6:00 AM: (503) 823-7000



CITY OF
PORTLAND, OREGON
 BUREAU OF DEVELOPMENT SERVICES
 1900 SW 4th Ave, Suite 5000
 Portland, OR 97201



PLUMBING PERMIT

05-154973-000-00-PT

Site Address: 8444 NW ST HELENS RD

Issued: 8/25/05

ADVANCED AMERICAN CONSTRUCTION

PROJECT INFORMATION		Occ. Group	Const. Type
Commercial/Multifamily	New Construction		
Project Description: FIXTURES FOR NEW TILT-UP BUILDING			
APPLICANT	ASSOCIATED PLUMBING CO	Phone (503) 331-0582	
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone	
CONTRACTOR	ASSOCIATED PLUMBING CO	Phone	
Project Details # of Fixtures 52 * Floor Drain/Floor Sink/Hub/Primer 18 * Interceptor/Grease Trap 1 * Sink/Basin/Lavatory 12 * Urinal 2 * Water Heater/Expansion Tank 2 Occupancy Group - PT Commercial/Industrial		Project Details * Catch Basin/Area Drain 3 * Hose Bib 5 * Roof Drain (Commercial) 4 * Tub/Shower/Shower Pan 1 * Water Closet (Toilet) 7 New Exterior Installation? Yes	
<p>This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days. For one and two-family permits call 503-823-7358. For commercial and multi-family residential permits, call 503-823-7302.</p>			
CITY CONTACT E-Mail: _____ Phone: _____ Fax: (503) 823-4172			
INSPECTION REQUEST PHONE NUMBERS TDD: (503) 823-6868		Building/Trade Inspections - Call Before 6:00 AM: (503) 823-7000	
IVR Inspection Request Number: 2492624		2005 AUG 24	

<h2 style="text-align: center;">Sprinkler Permit</h2> <p style="text-align: center;">Permit valid for 180 days</p>	<p style="text-align: center;">City of Portland</p> <p style="text-align: center;">FIRE PREVENTION DIVISION, PERMIT OFFICE 1300 SE Gideon Street, Portland OR 97202-2419 Phone: (503) 823-3712 Fax: (503) 823-3925</p>	<p>Permit Number: 051731 Permit Issued: 9/16/2005 Permit Fee Amount: \$811.79</p> <p>Code: 16U Building Permit No. Receipt#: 4448 App Rec'd Date: 9/7/2005 Pymt Type: CHECK Ref.No: 7850 Pymt Received by WILLIAMS & RYAN CONSTRUC Plans Reviewed By: <u>Ted Cassine</u></p>																																				
<p style="text-align: center;"><small>Work Description</small></p> <p>Install 8 inch backflow device in vault with reduced pressure device/723 LF underground-exterior fire line (525 LF 6" LF 6" / 3 each fire hydrants/ 1 each 6 inch.</p>	<p>IMPORTANT NOTE: Permit card and approved plans must be conspicuously posted on premises until job is completed and final inspection made. Request for final inspection must be made within 14 days after completion of work. For ease of inspection scheduling, please call at least 24 hours in advance of your desired inspection date and time.</p>																																					
<p>Subject to the compliance with the ordinances of the City of Portland, Permission is hereby granted by the Fire Marshal for the installation of:</p> <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Addition</td> <td><input type="checkbox"/> Complete</td> <td><input type="checkbox"/> Wet</td> <td><input type="checkbox"/> Underground Only</td> <td><input type="checkbox"/> Wet S/P</td> <td><input type="checkbox"/> Existing-Buildin</td> </tr> <tr> <td><input type="checkbox"/> Alteration</td> <td><input type="checkbox"/> Partial</td> <td><input type="checkbox"/> Dry</td> <td><input type="checkbox"/> Sprinkler Only</td> <td><input type="checkbox"/> Dry S/P</td> <td><input checked="" type="checkbox"/> New Construction</td> </tr> <tr> <td><input checked="" type="checkbox"/> New Installation</td> <td><input type="checkbox"/> Basement</td> <td><input type="checkbox"/> Preaction</td> <td><input checked="" type="checkbox"/> Underground w/Hyd.</td> <td><input type="checkbox"/> Combination</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Remove</td> <td><input type="checkbox"/> Exitway</td> <td><input type="checkbox"/> Deluge</td> <td><input type="checkbox"/> Sprinkler w/ Hyd.</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Repair</td> <td><input type="checkbox"/> Hood Vent</td> <td><input type="checkbox"/> AntiFreeze</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td><input type="checkbox"/> Spraybooth</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			<input type="checkbox"/> Addition	<input type="checkbox"/> Complete	<input type="checkbox"/> Wet	<input type="checkbox"/> Underground Only	<input type="checkbox"/> Wet S/P	<input type="checkbox"/> Existing-Buildin	<input type="checkbox"/> Alteration	<input type="checkbox"/> Partial	<input type="checkbox"/> Dry	<input type="checkbox"/> Sprinkler Only	<input type="checkbox"/> Dry S/P	<input checked="" type="checkbox"/> New Construction	<input checked="" type="checkbox"/> New Installation	<input type="checkbox"/> Basement	<input type="checkbox"/> Preaction	<input checked="" type="checkbox"/> Underground w/Hyd.	<input type="checkbox"/> Combination		<input type="checkbox"/> Remove	<input type="checkbox"/> Exitway	<input type="checkbox"/> Deluge	<input type="checkbox"/> Sprinkler w/ Hyd.			<input type="checkbox"/> Repair	<input type="checkbox"/> Hood Vent	<input type="checkbox"/> AntiFreeze					<input type="checkbox"/> Spraybooth				
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	<input type="checkbox"/> Spraybooth																																					
<p>Building Name: Advanced American Construction</p> <p>Occupant:</p> <p>Site Address: 8444 NW ST Helens RD Level(s) 2</p> <p>Contractor: WILLIAMS & RYAN CONSTRUCTION</p>		<p style="text-align: center;">FOR INTERNAL FIRE BUREAU USE ONLY</p> <table style="width: 100%;"> <tr> <td style="width: 50%;">Distribution of final permit and date completed:</td> <td style="width: 50%;"><input type="checkbox"/> Applicant</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/> EOPS</td> </tr> </table>	Distribution of final permit and date completed:	<input type="checkbox"/> Applicant		<input checked="" type="checkbox"/> EOPS																																
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<p>INSPECTION RECORD:</p>	<p>DATE</p>	<p>TIME IN/OUT</p>	<p>INSPECTOR NAME/INITIALS</p>	<p>CONTRACTOR NAME/INITIALS</p>	<p>NOTES</p>																																	
SYSTEM FLUSHED:																																						
HYDRO TEST:	12-16-05	1330	1355	R760																																		
OK TO COVER:	9-29-05	1130	1155	R760	WJ																																	
TRIP TEST:																																						
FINAL INSPECTION STATUS:																																						
<input type="checkbox"/> Approved Date: _____ <input type="checkbox"/> Cancel Signature: _____ Inspector: _____					<p>If this is cancelled, why? _____</p> <p>_____</p> <p>_____</p>																																	

P. 01

FAX NO. 360 699 4485

FEB-01-06 WED 07:51 AM PATRIOT FIRE PROTECTION

<h2 style="margin: 0;">Sprinkler Permit</h2> <p style="margin: 0;">Permit valid for 180 days</p>		<h3 style="margin: 0;">City of Portland</h3> <p style="margin: 0;">FIRE PREVENTION DIVISION, PERMIT OFFICE 1300 SE Gideon Street, Portland OR 97202-2419 Phone: (503) 823-3712 Fax: (503) 823-3925</p>		<p>Permit Number: 051725 Permit Issued: 9/28/2005 Permit Fee Amount: \$1,531.21 Code: 16S Building Permit No: Receipt#: 4444 App Rec'd Date: 9/8/2005 Pyml Type: CHECK Ref.No: 92138 Pyml Received by: PATRIOT FIRE PROTECTION Plans Reviewed By: Ken McGraw</p>							
<p>Work Description</p> <p>INSTALL NEW WET SYSTEM IN WAREHOUSE, DRY SYSTEM IN CANOPY & UNDERGROUND TO FIVE (5'-0") FOOT OUTSIDE BLDG; DRY SYSTEM; DENSITY - .495; DESIGN AREA - 2000SF, SPRINKLER AREA - 198 SF, ORIFICE SIZE - .70, "K" FACTOR - 25.2, TEMP RATING - 200 F</p>		<p>IMPORTANT NOTE: Permit card and approved plans must be conspicuously posted on premises until job is completed and final inspection made. Request for final inspection must be made within 14 days after completion of work. For ease of inspection scheduling, please call at least 24 hours in advance of your desired inspection date and time.</p>									
<p>Subject to the compliance with the ordinances of the City of Portland, Permission is hereby granted by the Fire Marshal for the installation of:</p>											
<table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 25%;"> <input type="checkbox"/> Addition <input type="checkbox"/> Alteration <input checked="" type="checkbox"/> New Installation <input type="checkbox"/> Remove <input type="checkbox"/> Repair </td> <td style="vertical-align: top; width: 25%;"> <input checked="" type="checkbox"/> Complete <input type="checkbox"/> Partial <input type="checkbox"/> Basement <input type="checkbox"/> Exitway <input type="checkbox"/> Hood Vent <input type="checkbox"/> Spraybooth </td> <td style="vertical-align: top; width: 25%;"> <input type="checkbox"/> Wet <input type="checkbox"/> Dry <input type="checkbox"/> Preaction <input type="checkbox"/> Deluge <input type="checkbox"/> AntiFreeze </td> <td style="vertical-align: top; width: 25%;"> <input type="checkbox"/> Underground Only <input checked="" type="checkbox"/> Sprinkler Only <input type="checkbox"/> Underground w/Hyd. <input type="checkbox"/> Sprinkler w/ Hyd. </td> <td style="vertical-align: top; width: 25%;"> <input type="checkbox"/> Wet S/P <input type="checkbox"/> Dry S/P <input type="checkbox"/> Combination </td> <td style="vertical-align: top; width: 25%;"> <input type="checkbox"/> Existing Building <input checked="" type="checkbox"/> New Construction </td> </tr> </table>						<input type="checkbox"/> Addition <input type="checkbox"/> Alteration <input checked="" type="checkbox"/> New Installation <input type="checkbox"/> Remove <input type="checkbox"/> Repair	<input checked="" type="checkbox"/> Complete <input type="checkbox"/> Partial <input type="checkbox"/> Basement <input type="checkbox"/> Exitway <input type="checkbox"/> Hood Vent <input type="checkbox"/> Spraybooth	<input type="checkbox"/> Wet <input type="checkbox"/> Dry <input type="checkbox"/> Preaction <input type="checkbox"/> Deluge <input type="checkbox"/> AntiFreeze	<input type="checkbox"/> Underground Only <input checked="" type="checkbox"/> Sprinkler Only <input type="checkbox"/> Underground w/Hyd. <input type="checkbox"/> Sprinkler w/ Hyd.	<input type="checkbox"/> Wet S/P <input type="checkbox"/> Dry S/P <input type="checkbox"/> Combination	<input type="checkbox"/> Existing Building <input checked="" type="checkbox"/> New Construction
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<p>Building Name: ADVANCED AMERICA CO Occupant: Site Address: 8444 NW ST HELENS RD Contractor: PATRIOT FIRE PROTECTION</p>				<p style="text-align: center;">Level(s) 2</p> <p style="text-align: center;">FOR INTERNAL FIRE BUREAU USE ONLY</p> <p>Distribution of final permit and date completed: <input checked="" type="checkbox"/> Applicant <input checked="" type="checkbox"/> EOPS</p>							
INSPECTION RECORD:	DATE	TIME IN/OUT	INSPECTOR NAME/INITIALS	CONTRACTOR NAME/INITIALS	NOTES						
SYSTEM FLUSHED:											
HYDRO TEST:											
OK TO COVER:											
TRIP TEST:											
FINAL INSPECTION STATUS:											
<input type="checkbox"/> Approved <input type="checkbox"/> Cancel											
<p style="text-align: right;">Signature _____ Date: _____ Inspector</p>											



CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave, Suite 5000
Portland, OR 97201



COMMERCIAL BUILDING PERMIT

05-113640-REV-01-CO

Site Address: 8444 NW ST HELENS RD

Issued: 10/17/05

ADVANCED AMERICAN CONSTRUCTION

PROJECT INFORMATION		Occ. Group	Const. Type
Factory/Industrial	New Construction	B S-1 F-2	III-B
Project Description: REVISION TO 05-113640 GRD 01 CO - REDUCE AMOUNT OF FILL AND ELIMINATE WALL			

APPLICANT	Group MacKenzie Architects *Scott Moore*	Phone (503) 224-9560
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone
CONTRACTOR	PERLO MCCORMACK PACIFIC	Phone

Project Details		Project Details	
Code Edition (Year)	2003 IBC	Ground Disturbance Area (Sq. Ft.)	1
Lot Area (Sq. Ft.)	122404	Number of Stories	2
Proposed # of new parking spaces	53	Sprinklers?	Y
Water District	Portland Water Bureau	Zoning - Property (1)	IMis

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7303.

CITY CONTACT	Peterson, Andy	Phone: 503-823-7751
E-Mail:	anpeterson@ci.portland.or.us	Fax: (503) 823-4172

**INSPECTION REQUEST
PHONE NUMBERS**

TDD: (503) 823-6863

IVR Inspection Request
Number: 2450506

Building/Trade Inspections - Call Before 6:00 AM:

(503) 823-7000



CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave., Suite 5000
Portland, OR 97201



ZONING PERMIT

06-119775-000-00-ZP

Site Address: 8444 NW ST HELENS RD

Issued: 3/31/06

ADVANCED AMERICAN CONSTRUCTION

PROJECT INFORMATION		Occ. Group	Const. Type
Landscaping	Commercial		
Project Description: LANDSCAPING			

APPLICANT	Group MacKenzie Architects *Scott Moore*	Phone (503) 224-9560
PROPERTY OWNER	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone (503) 445-9000
CONTRACTOR	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Phone

Project Details		Project Details
Zoning Enforcement Agency	Portland	

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7891

CITY CONTACT

E-Mail:

Phone:

Fax: (503) 823-4172

**INSPECTION REQUEST
PHONE NUMBERS**

Building/Trade Inspections - Call Before 6:00 AM:

(503) 823-7000

TDD: (503) 823-6868

IVR Inspection Request
Number:

2559330

City of Portland/Multnomah County

CERTIFICATE OF OCCUPANCY

Valid from 18TH day of APRIL, 20 06

Location:	8444 NW ST HELENS ROAD	Building Permit No.:	05-113640
Property Description or portion approved:	R961110320	Occupancy Group:	B
Owner:	ADVANCED AMERICAN CONSTRUCTION PROPERTIES LLC	Construction Type:	III-B
Use:	OFFICE AND MANUFACTURING BUILDING AND STORAGE YARD		
Special Conditions:			

THIS CERTIFICATE MUST BE VISIBLY AND PERMANENTLY POSTED

Certification is hereby given that this premise was inspected on this date and was in compliance with the applicable provisions of the City of Portland Zoning Ordinance and/or Construction Regulations for the use and occupancy as noted. Unauthorized change in the character of use or occupancy is prohibited.


For the Bureau of Development Services



City of Portland
Bureau of Development Services
Land Use Services Division

1900 SW Fourth Ave. Suite 5000
Portland, Oregon 97201
Telephone: 503-823-7300
TDD: 503-823-6868
FAX: 503-823-5630
www.portlandonline.com/bds

Date: June 19, 2006
To: Interested Person
From: Kimberly Miller, Land Use Services
503-823-5663

**NOTICE OF A TYPE II DECISION ON A PROPOSAL IN
YOUR NEIGHBORHOOD**

The Bureau of Development Services has approved a proposal in your neighborhood. The reasons for the decision are included in this notice. If you disagree with the decision, you can appeal it and request a public hearing. Information on how to appeal this decision is listed at the end of this notice.

CASE FILE NUMBER: LU 06-122315 GW

GENERAL INFORMATION

Applicant: Scott Burgess
Advanced American Construction Properties
PO Box 1630
Oregon City, OR 97045

Representative: Rhys Konrad
Group Mackenzie
PO Box 69039
Portland, OR 97045

Owner: Advanced American Construction Properties
415 S McLoughlin Blvd
Oregon City, OR 97045

Harry Whitney
Oregon Department of Transportation
Region 1 Right of Way
123 NW Flanders
Portland, OR 97209-4012

Site Address: 8444 NE St Helens Road; and portion of ODOT right of way below the
St Johns Bridge.

Legal Description: TL 300 0.34 ACRES, SECTION 11 1N 1W; TL 100 1.53 ACRES,
SECTION 11 1N 1W; TL 600 2.81 ACRES, SECTION 11 1N 1W; TL
500 1.29 ACRES, SECTION 11 1N 1W

Tax Account No.: R961110180, R961110240, R961110320, R961110410

State ID No.: 1N1W11AC 00300, 1N1W11DA 00100, 1N1W11 00600, 1N1W11
00500

Quarter Section: 2220, 2120

Neighborhood: Linnton, contact Kerrigan Gray at 503-778-2444.

Business District: Northwest Industrial, contact Ann Gardner at 503-417-2041.
District Coalition: Northwest Industrial, contact Paul Pope at 503-778-6771.
 Neighbors West/Northwest, contact Mark Sieber at 503-823-4212

Plan District: Guild's Lake Industrial

Zoning: IHis, Heavy Industrial bas zone with River Industrial Greenway and Scenic overlay zones

Case Type: GW - Greenway Review
Procedure: Type II, an administrative decision with appeal to the Hearings Officer.

Proposal:

Advanced American Construction (AAC) provides marine construction services, industrial repair, and diving service for primarily marine-related activities and complex underwater facilities. In 2005 the business relocated to this site, which has been used in the past for similar river related activities. The applicant proposes to amend the previously approved greenway review (LU 05-108668 GW) which approved a 37,225 sq. ft. building, site work and crane maneuvering area within the greenway setback, and landscaping within and riverward of the greenway setback. The site consists of 7.4 acres along the riverbank. The site is split by a 100-foot wide ODOT right-of-way that runs under the St. Johns Bridge.

The following is proposed under this review:

- Add 3,959 sq. ft. of greenway plantings and seeding within the greenway setback and riverward within the ODOT right of way,
- Use herbicides to permanently remove the remaining invasive species along the riverbank, and
- Leave an existing metal pier structure required to be removed by Condition B of LUR 05-108668 GW.

Greenway review is required per 33.440.310 to use herbicides within the greenway overlay, and to amend LUR 05-108668 GW to leave the metal pier structure and for changes to greenway plantings.

Relevant Approval Criteria:

In order to be approved, this proposal must comply with the approval criteria of Title 33. The approval relevant criteria are:

- 33.440.350 A-H - Greenway Review
- Willamette Greenway Design Guidelines

ANALYSIS

Site and Vicinity: The site is located along the Willamette River, beneath the St. Johns Bridge and east of St. Helens Rd (Hwy 30). The 7.4-acre industrial site has a 37,225 sq. ft. building, parking lot, a crane maneuvering area within the greenway setback, and landscaping within and riverward of the greenway setback. A rail line is adjacent to the site to the west. At the north end of the site, an unpaved ramp leads towards the river to the location of a former ferry crossing. Along the riverbank, north of the St. Johns Bridge, are two short piers level with the existing top of bank. South of the St. Johns Bridge is a floating dock marina that is leased by a tow-boat company.

Other development in the vicinity along the Willamette River is primarily industrial in use and includes marine related uses such as towboat operators and petroleum transfer docks and tank farms.

Zoning: The site is zoned Heavy Industrial (IH) with River Industrial Greenway ("i") and Scenic ("s") overlay zoning. The site is also within the boundaries of the Guild's Lake Industrial

Sanctuary plan district. The IH zone is one of three zones that implement the Industrial Sanctuary designation of the Comprehensive Plan. The IH zone provides land where a wide variety of industrial uses may locate, including those not desirable in other zones due to their objectionable impacts or appearance. The Guild's Lake Industrial Sanctuary plan district seeks to foster the preservation and growth of this premier industrial area, while preventing the expansion of non-industrial uses. The Scenic Resources overlay zone is intended to protect Portland's significant scenic resources as identified in the Scenic Resources Protection Plan. This site lies within view corridors meant to protect views of the St. Johns Bridge and the site contains height limitations of 100 feet and 125 feet.

The River Industrial Greenway overlay encourages and promotes the development of river-dependent and river-related industries which strengthen the economic viability of Portland as a marine shipping and industrial harbor, while also preserving and enhancing the riparian habitat and providing public access where practical. Only river-dependent or river-related uses are allowed on sites with a River Industrial Greenway designation. The existing use is a business that provides marine construction services for primarily marine-related activities and complex underwater facilities, such as docks and piers, pipelines, outfall structures, communication cables, and bridge repair. The existing development activities listed above were found to be river-dependent and allowed under LUR 05-108668 GW.

Land Use History: City records indicate that prior land use reviews include the following:

- CU 38-72: Approved Conditional Use Review for excavation and fill.
- GP 6-83: Approved Greenway Review for a modular office building, off street parking spaces, and greenway landscaping.
- GP 17-88: Approved Greenway Review to reinforce an existing wharf and to construct breasting platforms and deadman anchors.
- LUR 92-00245 MP: Approved Land Division Review for a 3-lot minor partition.
- LUR 92-00246 AD: Approved Adjustment Review to reduce the lot size for parcel 2 for LUR 92-00245 MP.
- LUR 05-108668 GW: Approved river-dependent development and greenway landscaping associated with a new marine construction business.

Summary of Applicant's Statement: use at your discretion to further explain proposal and/or how they propose to mitigate for impacts or meet approval criteria.

Agency Review: A "Notice of Proposal in Your Neighborhood" was mailed **April 27, 2006**. The following Bureaus have responded with no issues or concerns:

- Bureau of Transportation Engineering
- Water Bureau
- Fire Bureau
- Site Development Section of BDS
- Bureau of Parks-Forestry Division
- Bureau of Development Services, Life Safety Review

The Bureau of Environmental Services responded with the following comments:

1. An Herbicide Use Plan was submitted on 31 May 2006 for review by BES. The proposed parameters and the attached Integrated Pest Management Plan from Portland Parks and Recreation meet BES approval; subject to the restrictions and limitations noted in the plan, BES supports the use of herbicide on the site to control the invasive species.
2. BES has no objections to the request to leave the metal pier structure in place. Please see Exhibit E-1 for additional details.

Neighborhood Review: A Notice of Proposal in Your Neighborhood was mailed on **April 27, 2006**. No written responses have been received from either the Neighborhood Association or notified property owners in response to the proposal.

ZONING CODE APPROVAL CRITERIA**33.440.350 Greenway Review Approval Criteria**

The approval criteria for a greenway review have been divided by location or situation. The divisions are not exclusive; a proposal must comply with **all** of the approval criteria that apply to the site. A greenway review application will be approved if the review body finds that the applicant has shown that all of the approval criteria are met.

A. For all greenway reviews: The Willamette Greenway Design Guidelines must be met for all greenway reviews. The Willamette Greenway Design Guidelines address the quality of the environment along the river and require public and private developments to complement and enhance the riverbank area. The Design Guidelines are grouped in a series of eight Issues:

A complete description of the Design Guidelines and their applicability is provided in pages C-3 through C-49 of the *Willamette Greenway Plan*. Findings for the individual guidelines are included below.

Issue A. Relationship of Structures to the Greenway Setback Area: This issue “applies to all but river-dependent and river-related industrial use applications for Greenway Approval, when the Greenway Trail is shown on the property in the *Willamette Greenway Plan*.” These guidelines call for complementary design and orientation of structures so that the greenway setback area is enhanced:

1. Structure Design
2. Structure Alignment

Issue B. Public Access: This issue “applies to all but river-dependent and river-related industrial use applications for Greenway Approval, when the Greenway Trail is shown on the property in the *Willamette Greenway Plan*.” These guidelines call for integration of the Greenway Trail into new development, as well as the provision of features such as view points, plazas, or view corridors:

1. Public Access
2. Separation and Screening
3. Signage
4. Access to the Water’s Edge

Findings: There is no Greenway Trail designation on the private property at the site. Also, the site is used as a river-dependent industrial use that provides marine construction services for marine-related activities and underwater facilities, such as docks and piers, pipelines, outfall structures, communication cables, and bridge repair. For these reasons, guideline issues A and B do not apply.

Issue C. Natural Riverbank and Riparian Habitat: This issue “applies to situations where the river bank is in a natural state, or has significant wildlife habitat, as determined by the wildlife habitat inventory.” These guidelines call for the preservation and enhancement of natural banks and areas with riparian habitat:

1. Natural Riverbanks
2. Riparian Habitat

Findings: The current riverbank along the site is not in a natural state and has been previously altered through the use of riprap bank stabilization. The *Lower Willamette River Wildlife Habitat Inventory (LWRWHI)* designated the site (Site 15.9a) in 1986 as having a Rank V habitat designation. Rank V sites consist primarily of heavy industrial uses with riprap banks, docks, and wharves. As a Rank V designation, the site is categorized as having little or no value for wildlife at the present time. According to the LWRWHI, Rank V sites have potential for wildlife enhancement and rehabilitation efforts should focus on replanting native species of trees and shrubs which will better serve

wildlife needs. To the extent practical, the extensive riprap shores and degraded riparian habitat of Rank V sites should be enhanced for wildlife and aesthetic purposes while respecting existing river-dependent and river-related industrial uses and development.

Grading of the entire 25-foot greenway setback area for crane operation and material staging areas was approved in LU 05-108668 GW. The crane operation and staging areas were surfaced with a combination of heavy asphalt paving and gravel. Along the northern portion of the riverbank, a small amount of fill was placed riverward of the existing top of bank in order to fill a small depression and create a flat, stable, and safe maneuvering area for crane operations. Along the southern portion of the site, the area south of the ODOT bridge right-of-way, the existing top of bank was pulled back and raised approximately 5.6 feet to facilitate crane maneuvering. A combination of vertical, extruded, and flush mounted curbing was placed at the top of bank to delineate the riverbank from the crane maneuvering area as well as reduce any transportation of sediments or other contaminants to the Willamette River during storm events.

The ODOT bridge right-of-way connects the two portions of the AAC site. AAC utilizes the ODOT right-of-way to maneuver equipment between the north and south portions of their site. As a result additional landscaping is proposed to be planted within and riverward of the greenway setback within the ODOT right-of-way. The proposed plantings are consistent with those approved in LUR 05-108668 GW. An area of 3,959 square feet will be planted with native species including 8 trees, 90 shrubs and a mix of wildflowers and grasses at rate of 1-2 pounds per 1,000 square feet. (See Exhibit C.2)

The riverbank adjacent to the river-dependent use is not a natural riverbank, and the proposed landscaping provides practical habitat enhancements. With the proposed landscaping, this issue can be satisfied.

Issue D. Riverbank Stabilization Treatments: This guideline “applies to all applications for Greenway Approval.” This guideline promotes bank treatments for upland developments that enhance the appearance of the riverbank, promote public access to the river, and incorporate the use of vegetation where possible:

1. Riverbank Enhancement

Findings: Because there is no greenway trail designation on the site, and because river-dependent industrial uses are exempt from providing public access, the portions of this guideline related to public access do not apply.

Previous case LUR 05-108668 GW, conditioned the removal of an existing metal pier structure. After removal of invasive species around the pier structure, the applicant was able to investigate the size and depth of the existing structure. The applicant proposes to leave the existing metal pier structure because the larger than expected concrete footings go deep into the riverbank and removal would result in destabilization and major riverbank disturbance. Additionally, the applicant would like to leave the structure as-is for a potential future use. There is no proposal to use the structure at this time.

The proposal to leave the pier structure would avoid impacts to the riverbank and local habitat. The only change to condition of approval B from LU 05-108668 GW is to leave the metal pier structure in place, with the rest of the condition of approval remaining unchanged:

Condition B: The applicant shall remove all invasive plant species from the riverbank. In addition, all wood and metal debris present along the riverbank, such as large wood pilings and timbers near the ferry crossing ramp and a dilapidated, half-submerged metal pier structure located between the two existing piers, shall be removed.

Through the landscaping proposed for the ODOT right-of-way riverbank, the project provides practical landscape enhancements to improve the appearance of the riverbank. These additional plantings will be consistent with the riverbank plantings approved in 05-108668 GW. With the revised condition of approval to retain the existing metal pier, which will eliminate potentially significant riverbank destabilization and disturbance, this guideline is satisfied.

Issue E. Landscape Treatments: This issue “applies to all applications for Greenway Approval which are subject to the landscape requirements of the Greenway chapter of Title 33 Planning and Zoning of the Portland Municipal Code.” These guidelines call for landscaping treatments that create a balance between the needs of both human and wildlife populations:

1. Landscape Treatment
2. Grouping of Trees and Shrubs
3. Transition

Findings: Landscaping must be provided to conserve or re-establish vegetative cover within or riverward of the greenway setback. Landscape treatments are intended to create an environment which recognizes both human and wildlife use. The greenway landscape standards found in 33.440.230, require a minimum amount of trees, shrubs, and ground cover based on the lineal river frontage for a site. Minimum landscape treatments are not required where they will significantly interfere with a river-dependent or river-related use or development. As noted in issue C above, an area of 3,959 square feet will be planted with native species including 8 trees, 90 shrubs and a mix of wildflowers and grasses at rate of 1-2 pounds per 1,000 square feet is proposed for the ODOT right-of-way. The applicant has proposed a native mixture of overstory and understory plants, wildflowers, and grasses. The proposed plantings exceed the landscape standard in 33.440.230.B of the Greenway Chapter.

In the prior land use review for AAC, invasive plant removal was required by condition of approval B. Attempts to remove all invasive species with conventional methods has proved unfeasible due to the difficulty caused by the rip rap on portions of the riverbank. The applicant requests using an herbicide to aid in the effort to further meet Condition B. For maintenance of the approved and proposed landscaping and to control invasive species, the applicant proposes use of herbicides as detailed in their Herbicide Use Plan (See Exhibits C-4 through C-6). When herbicide application is requested, BES requires that the Portland Parks Integrated Pest Management Policy for waterways be followed (See Exhibit E.1). The applicant's Herbicide Use Plan proposes herbicide application in conformance with the Integrated Pest Management Program (IPMP) Policy 19. The applicant details the type of chemical, targeted species, application tools, timeframe and licensed applicator in their proposed program (See Exhibit C-4). BES has reviewed the submitted Herbicide Use Plan and supports the use of herbicide on the site to control the invasive species.

The proposal for permanent removal of invasive species from the riverbank will contribute to the success of the greenway plantings and riverbank rehabilitation. With a condition to require herbicide application for non-native and invasive plant removal to meet IPMP - Policy 19 standards this guideline can be met.

Issue F. Alignment of Greenway Trail: This issue “applies to all applications for Greenway Approval with Greenway Trail shown on the property in the Willamette Greenway Plan.” These guidelines give direction in the proper alignment of the greenway trail and call for consideration of habitat protection, the physical features of the site and the necessity of maintaining year-round use of the trail:

1. Year-Round Use
2. Habitat Protection
3. Alignment

Issue G. Viewpoints: This issue “applies to all applications for Greenway Approval with a public viewpoint shown on the property in the *Willamette Greenway Plan* and for all applications proposing to locate a viewpoint on the property. These guidelines provide direction about the features and design of viewpoints, as required at specific locations:

1. Design
2. Facilities
3. Access to Water’s Edge
4. Relationship to Trail

Issue H. View Corridors: This issue “applies to all applications for Greenway Approval with a view corridor shown on the property in the *Willamette Greenway Plan*”. These guidelines provide guidance in protecting view corridors to the river and adjacent neighborhoods.

1. Right-of-way Protection
2. View Protection
3. Landscape Enhancement

Findings: There are no Greenway Trail, (Greenway) Public Viewpoints, or (Greenway) View Corridors shown on the property in the *Willamette Greenway Plan*. For these reasons, guideline issues F, G and H do not apply.

SUMMARY FINDINGS for 33.440.350.A - Greenway Design Guidelines: Based on the foregoing, guideline issues A, B, F, G, and H do not apply. Guideline issues C, D and E are or will be met with one new and one revised condition. Accordingly, this criterion can be met.

- B. River frontage lots in the River Industrial zone.** In the River Industrial zone, uses that are not river-dependent or river-related may locate on river frontage lots when the site is found to be unsuitable for river-dependent or river-related uses. Considerations include such constraints as the size or dimensions of the site, distance or isolation from other river-dependent or river-related uses, and inadequate river access for river-dependent uses.

Findings: The site is within the River Industrial overlay zone and the existing use was found to be river-dependent as it provides marine construction services for primarily marine-related activities and complex underwater facilities, such as docks and piers, pipelines, outfall structures, communication cables, and bridge repair. Because the existing use of the site is consistent with the purpose of the River Industrial overlay zone, this criterion does not apply.

- C. Development within the River Natural zone.** The applicant must show that the proposed development, excavation, or fill within the River Natural zone will not have significant detrimental environmental impacts on the wildlife, wildlife habitat, and scenic qualities of the lands zoned River Natural. The criterion applies to the construction and long-range impacts of the proposal and to any proposed mitigation measures. Excavations and fills are prohibited except in conjunction with approved development or for the purpose of wildlife habitat enhancement, riverbank enhancement, or mitigating significant riverbank erosion.
- D. Development on land within 50 feet of the River Natural zone.** The applicant must show that the proposed development or fill on land within 50 feet of the River Natural zone will not have a significant detrimental environmental impact on the land in the River Natural zone.

Findings: The nearest area with the River Natural (“n”) overlay zoning designation is approximately 1 mile away, across the river and along the banks and bluffs below N. Willamette Boulevard near the Willamette railroad bridge. Since no work is proposed in or within 50 feet of land within the River Natural overlay zone, criterion C and D do not apply.

- E. Development within the greenway setback.** The applicant must show that the proposed development or fill within the greenway setback will not have a significant detrimental

environmental impact on Rank I and II wildlife habitat areas on the riverbank. Habitat rankings are found in the *Lower Willamette River Wildlife Habitat Inventory*.

Findings: The nearest Rank I or II wildlife habitat areas are approximately 1 mile upstream and 1 mile downstream of the project area. The project will not impact the riverbank below the ordinary high water line and the existing riverbank conditions will be enhanced through greenway plantings, as described above. Since the existing greenway conditions will be enhanced, the proposed work is expected to have minimal, if any, detrimental impacts on Rank I and Rank II areas in the vicinity. Therefore, this criterion is met.

F. Development riverward of the greenway setback.

1. The proposal will not result in the significant loss of biological productivity in the river;
2. The riverbank will be protected from wave and wake damage;
3. The proposal will not:
 - a) Restrict boat access to adjacent properties;
 - b) Interfere with the commercial navigational use of the river, including transiting, turning, passing, and berthing movements;
 - c) Interfere with fishing use of the river;
 - d) Significantly add to recreational boating congestion;
4. The request will not significantly interfere with beaches that are open to the public.

Findings: No new development is proposed with this review. Existing riverbank treatments (i.e. rip rap) at and below the ordinary high water line will remain and continue to protect the bank from wave and wake damage. The proposed ODOT riverbank landscape enhancements are limited to areas that will not impact boat access, create boating congestion, or interfere with the navigational use of the river. There are presently no amenities for fishing or beach access on the site, and no changes to this current state are proposed. Therefore, on a whole, the proposal is expected to meet this criterion.

G. Development within the River Water Quality overlay zone setback.

H. Mitigation or remediation plans.

Findings: No activity occurs within the River Water Quality ("q") overlay zone, since the site is within the River Industrial ("i") overlay zone. Mitigation or remediation plans are only required by the approval criteria specific to development within the River Water Quality overlay zone, and therefore the requirement for such plans is not triggered by this case. For these reasons, criteria G and H do not apply.

DEVELOPMENT STANDARDS

Unless specifically required in the approval criteria listed above, this proposal does not have to meet the development standards in order to be approved during this review process. The plans submitted for a building or zoning permit must demonstrate that all development standards of Title 33 can be met, or have received an Adjustment or Modification via a land use review prior to the approval of a building or zoning permit.

CONCLUSIONS

Advanced American Construction located to the site in 2005. The site consists of 7.4 acres along the riverbank. The site is split by a 100-foot wide ODOT right-of-way that runs under the St. Johns Bridge. A new 37,225 sq. ft. building, site work and crane maneuvering area within the greenway setback, and landscaping within the greenway setback and riverward was reviewed and approved in LUR 05-108668 GW. The applicant proposes to amend the previously approved greenway review to allow an existing metal pier structure to remain, utilize herbicide to permanently remove invasive species along the riverbank, and add 3,959 sq. ft. of greenway plantings and seeding within the greenway setback and riverward within the ODOT right of way. The ODOT plantings are being added since AAC utilizes ODOT right-of-way

to travel from the north to south portions of the site. The riverbank will be enhanced with the proposed plantings and the permanent removal of invasive species.

As noted in the findings throughout this report, and with the implementation of noted conditions, the proposal is expected to meet the applicable approval criteria, and thus should be approved.

ADMINISTRATIVE DECISION

Approval of

- Herbicide Use to remove invasive species,
- Greenway plantings within the ODOT right-of-way below the St. Johns Bridge,
- Modification of Condition B of LUR 05-108668 GW to allow the existing metal pier structure to remain,

per the approved site plans, Exhibits C-1 through C-6, signed and dated June 15, 2006, subject to the following conditions:

- A. As part of the building permit application submittal, the following development-related conditions (B through C) must be noted on each of the 4 required site plans or included as a sheet in the numbered set of plans. The sheet on which this information appears must be labeled "ZONING COMPLIANCE PAGE - Case File LU 06-122315 GW." All requirements must be graphically represented on the site plan, landscape, or other required plan and must be labeled "REQUIRED."
- B. The applicant shall remove all invasive plant species from the riverbank. In addition, all wood and metal debris present along the riverbank, such as large wood pilings and timbers near the ferry crossing ramp, shall be removed.
- C. Use of herbicides on the site must be used in conformance with Portland Parks and Recreation Integrated Pest Management Program (IPMP) Policy 19 and approved Exhibits C4-6.

Staff Planner: Kimberly Miller

Decision rendered by:  on June 15, 2006

By authority of the Director of the Bureau of Development Services

Decision mailed: June 19, 2006

About this Decision. This land use decision is **not a permit** for development. Permits may be required prior to any work. Contact the Development Services Center at 503-823-7310 for information about permits.

Procedural Information. The application for this land use review was submitted on April 12, 2006, and was determined to be complete on April 24, 2006.

Zoning Code Section 33.700.080 states that Land Use Review applications are reviewed under the regulations in effect at the time the application was submitted, provided that the application is complete at the time of submittal, or complete within 180 days. Therefore this application was reviewed against the Zoning Code in effect on April 12, 2006.

ORS 227.178 states the City must issue a final decision on Land Use Review applications within 120-days of the application being deemed complete. The 120-day review period may be waived or extended at the request of the applicant. In this case, the applicant requested that the 120-day review period be extended by 28 days under two separate requests. Please refer to Exhibits F-1, F-2 for extension requests.

Some of the information contained in this report was provided by the applicant.

As required by Section 33.800.060 of the Portland Zoning Code, the burden of proof is on the applicant to show that the approval criteria are met. The Bureau of Development Services has independently reviewed the information submitted by the applicant and has included this information only where the Bureau of Development Services has determined the information satisfactorily demonstrates compliance with the applicable approval criteria. This report is the decision of the Bureau of Development Services with input from other City and public agencies.

Conditions of Approval. This approval may be subject to a number of specific conditions, listed above. Compliance with the applicable conditions of approval must be documented in all related permit applications. Plans and drawings submitted during the permitting process must illustrate how applicable conditions of approval are met. Any project elements that are specifically required by conditions of approval must be shown on the plans, and labeled as such.

These conditions of approval run with the land, unless modified by future land use reviews. As used in the conditions, the term "applicant" includes the applicant for this land use review, any person undertaking development pursuant to this land use review; the proprietor of the use or development approved by this land use review, and the current owner and future owners of the property subject to this land use review.

Appealing this decision. This decision may be appealed to the Hearings Officer, which will hold a public hearing. Appeals must be filed **by 4:30 PM on July 3, 2006** at 1900 SW Fourth Ave. Appeals can be filed on the first floor in the Development Services Center until 3 p.m. After 3 p.m., appeals must be submitted to the receptionist at the front desk on the fourth floor. **An appeal fee of \$250 will be charged.** The appeal fee will be refunded if the appellant prevails. Recognized neighborhood associations are not subject to the appeal fee. Low-income individuals appealing a decision for their personal residence that they own in whole or in part may qualify for an appeal fee waiver. In addition, an appeal fee may be waived for a low income individual if the individual resides within the required notification area for the review, and the individual has resided at that address for at least 60 days. Assistance in filing the appeal and information on fee waivers is available from BDS in the Development Services Center. Fee waivers for low-income individuals must be approved prior to filing the appeal; please allow 3 working days for fee waiver approval. Please see the appeal form for additional information.

The file and all evidence on this case are available for your review by appointment only. Please contact the receptionist at 503-823-0625 to schedule an appointment. I can provide some information over the phone. Copies of all information in the file can be obtained for a fee equal to the cost of services. Additional information about the City of Portland, city bureaus, and a digital copy of the Portland Zoning Code is available on the internet at www.portlandonline.com.

Attending the hearing. If this decision is appealed, a hearing will be scheduled, and you will be notified of the date and time of the hearing. The decision of the Hearings Officer is final; any further appeal must be made to the Oregon Land Use Board of Appeals (LUBA) within 21 days of the date of mailing the decision, pursuant to ORS 197.620 and 197.830. Contact LUBA at 550 Capitol St. NE, Salem, Oregon 97310 or phone 1-503-373-1265 for further information.

Failure to raise an issue by the close of the record at or following the final hearing on this case, in person or by letter, may preclude an appeal to the Land Use Board of Appeals (LUBA) on that issue. Also, if you do not raise an issue with enough specificity to give the Hearings Officer an opportunity to respond to it, that also may preclude an appeal to LUBA on that issue.

Recording the final decision.

Before the applicant can proceed with their project, the final Land Use Review decision must be recorded with the Multnomah County Recorder. A building or zoning permit will be issued only after the final decision is recorded. The final decision may be recorded on or after **July 5, 2006 (the day following the final date to appeal).**

The applicant, builder, or a representative may record the final decision as follows:

- By Mail: Send the two recording sheets (sent in separate mailing) and the final Land Use Review decision with a check made payable to the Multnomah County Recorder to: Multnomah County Recorder, P.O. Box 5007, Portland OR 97208. The recording fee is identified on the recording sheet. Please include a self-addressed, stamped envelope.
- In Person: Bring the two recording sheets (sent in separate mailing) and the final Land Use Review decision with a check made payable to the Multnomah County Recorder to the County Recorder's office located at 501 SE Hawthorne Boulevard, #158, Portland OR 97214. The recording fee is identified on the recording sheet.

For further information on recording, please call the County Recorder at 503-988-3034
For further information on your recording documents please call the Bureau of Development Services Land Use Services Division at 503-823-0625.

Expiration of this approval. This approval expires three years from the date the final decision is rendered unless a building permit has been issued, or the approved activity has begun.

Where a site has received approval for multiple developments, and a building permit is not issued for all of the approved development within 3 years of the date of the final decision, a new land use review will be required before a permit will be issued for the remaining development, subject to the Zoning Code in effect at that time.

Applying for your permits. A building permit, occupancy permit, or development permit must be obtained before carrying out this project. At the time they apply for a permit, permittees must demonstrate compliance with:

- All conditions imposed here.
- All applicable development standards, unless specifically exempted as part of this land use review.
- All requirements of the building code.
- All provisions of the Municipal Code of the City of Portland, and all other applicable ordinances, provisions and regulations of the City.

EXHIBITS

NOT ATTACHED UNLESS INDICATED

- A. Applicant's Statement
- B. Zoning Map (attached)
- C. Plans/Drawings:
 - 1. Site Plan (attached)
 - 2. Landscape Plan (attached)
 - 3. Planting and Irrigation Details
 - 4. Written Herbicide Use Plan (attached)
 - 5. Herbicide Use Plan Map
 - 6. Policy 19 of the Integrated Pest Management Program
- D. Notification information:
 - 1. Mailing list
 - 2. Mailed notice
- E. Agency Responses:
 - 1. Bureau of Environmental Services
 - 2. Bureau of Transportation Engineering and Development Review
 - 3. Water Bureau
 - 4. Fire Bureau
 - 5. Site Development Review Section of BDS
 - 6. Bureau of Parks, Forestry Division
 - 7. Bureau of Development Services Life Safety Review

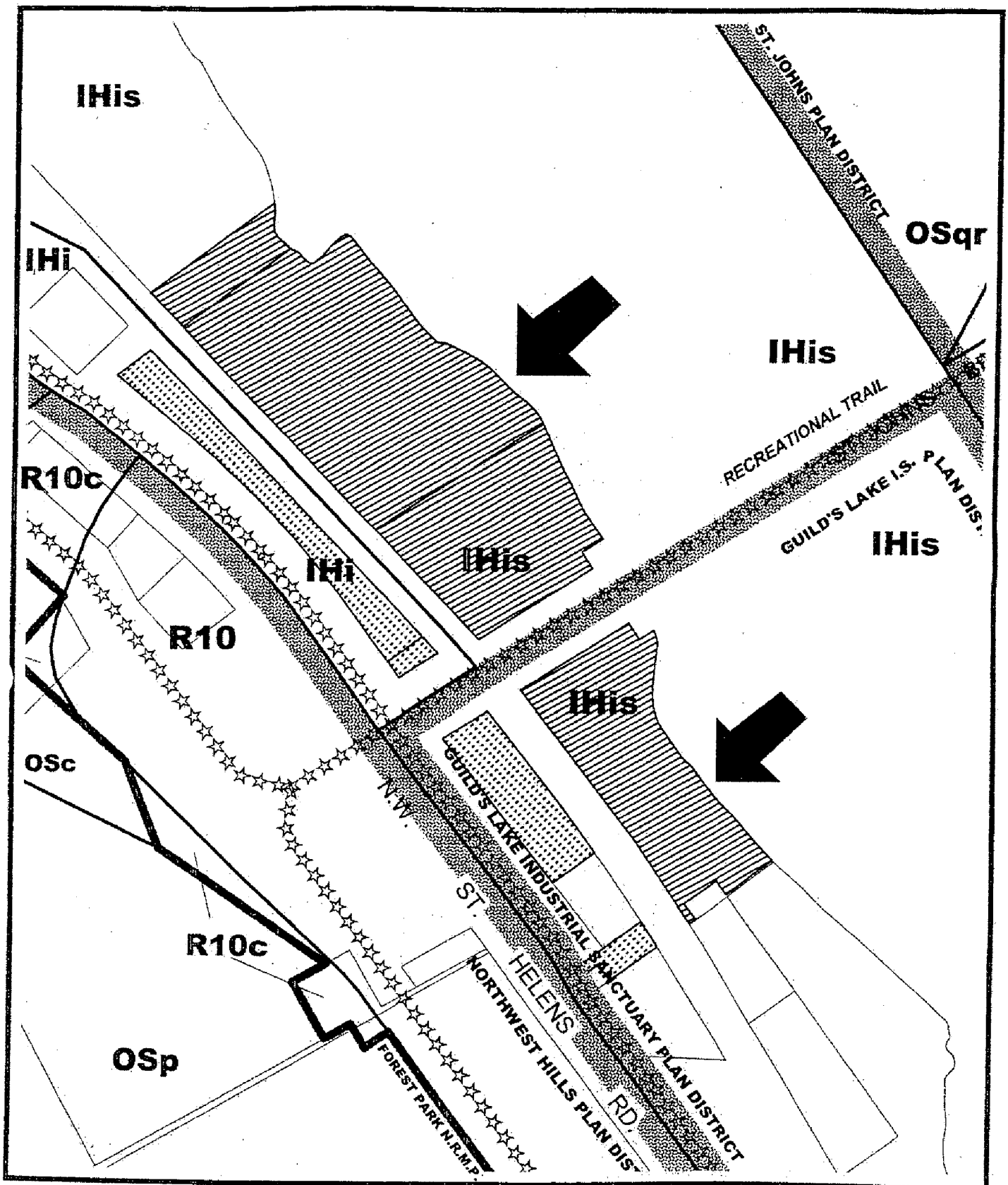
F. Correspondence:

1. Letter from applicant, May 15, 2006, requesting two week extension to 120 days
2. Letter from applicant, May 30, 2006, requesting two week extension to 120 days
3. Letter from Harry Whitney (to Scott Burgess), May 30, 2006, ODOT approving planting on their property



G. Other:

1. Original LU Application
2. Site History Research

The Bureau of Development Services is committed to providing equal access to information and hearings. If you need special accommodations, please call 503-823-0625 (TTY 503-823-6868).



ZONING

-  Site
-  Property also owned

File No. LU 06-122315 GW

1/4 Section 2220 , 2120

Scale 1 inch = 200 feet

State-Id 1N1W11AC 300+

Exhibit B (Apr 18, 2006)



This site lies within the:
GUILD'S LAKE INDUSTRIAL SANCTUARY PLAN DISTRICT

General Contractor
PEOPLE'S MOOREBACH P&C
 2110 NW Everett St.
 Portland, Oregon 97203
 Phone (503) 674-0080
 Fax (503) 674-1124

Ben-Gurion University
NRCNM INTERNATIONAL
DIVISION
815 SW 44th
Miami, FL 33155
Phone: (305) 351-7000
Fax: (305) 732-1853

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1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 26

BITE PLAN

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6542 DE LOIS ROAD
MILWAUKEE, WISCONSIN 53222-8136
PHONE: (414) 761-9334
FAX: (414) 761-9328

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2040378.00

G R O U P

MACKENZIE

May 30, 2006

City of Portland – BES
Attention: Elisabeth Cadigan
1120 SW 5th Avenue
Portland, OR 97201

Re: **Advanced American Construction**
Greenway Review #06-122315-LU
Project Number 2040378.07

Dear Elisabeth:

The purpose of this letter is to follow up on our recent telephone conversation regarding the proposed riverbank landscaping within the ODOT right-of-way for the Advanced American Construction project located at 8444 NE St. Helens Road. Due to the physical nature of the existing riverbank, initial manmade efforts to remove the existing invasive species have been unsuccessful. As such this letter addresses the criteria for the proposed use of an herbicide to permanently remove the invasive species from the riverbank as submitted in #06-122315-LU.

INTEGRATED PEST MANAGEMENT PROGRAM

The use of an herbicide is proposed along the riverbank in conformance with the Integrated Pest Management Program (IPMP). Policy 19 of the IPMP (see attached) addresses pest management specific to waterways. The pesticides mentioned in Policy 19 are specific to use within a buffer zone, which is defined as, "a corridor of land that is 25 feet in width on the sides of a stream or other body of water. Measurement of this buffer zone begins at the edge of the water line at the time of application." The proposed herbicide would be used within the buffer zone as defined by the IPMP.

Policy 19 goes on to describe four separate buffer zone classifications: Type A, B, C, and D. Based on the features and examples of each classification, the area along the riverbank adjacent to the Advance American Construction site most closely resembles a Type C – Impacted Natural Areas. A subsequent matrix, also attached, shows that in a Type C buffer zone both Glyphosate and Triclopyr are allowed to be used. The Glyphosate products specified are Roundup Pro and Rodeo, and the Triclopyr product is Garlon 3A, Brush-B-Gone, or other amine formulations, which is consistent with the chemicals permitted as stated in your May 3rd email (see attached).

TYPE OF CHEMICAL PROPOSED

The use of Garlon 3A is proposed for this project to remove the remaining invasive species (mainly Blackberries) as is shown on the attached herbicide use plan. Garlon 3A satisfies the limitations per the IPMP document as well as in your email (i.e., percentages of concentration).

Exhibit C.4
06-122315 GW

H:\PROJECTS\204037807\WP\LTR\060530-BES.doc

0690 SW Bancroft St | PO Box 69039 | Portland, OR 97239-0039
Tel: 503.224.9560 Web: www.grpmack.com Fax: 503.228.1285

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AAC000340

City of Portland - BES
Advanced American Construction
Project Number 2040378.07
May 30, 2006
Page 2

RECEIVED

JUN 8 2006

TARGETED PLANT SPECIES

The targeted plant specie requiring the use of an herbicide is *Rubus discolor*, or commonly known as Blackberry. The locations of the Blackberry shrubs are shown on the attached herbicide use plan.

APPLICATION TOOLS TO BE USED

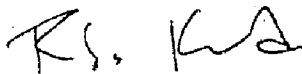
As specified in the IPMP document, application of the herbicide will be done by hand using a backpack sprayer. Additionally, as is specified on the attached plan, a cut stump treatment is proposed. The herbicide will be applied within 5 minutes of the cutting to ensure effectiveness. A dye is proposed to be added to the Garlon 3A to verify which stumps have been treated.

PREVENTION METHODS

The application is proposed in two phases to ensure all Blackberry shrubs are removed (see attached herbicide plan). The first phase is in late spring/early summer, and the second is in early fall. To protect water quality and minimize drift of the herbicide, the licensed applicator (Ed Kednay of Organicare ODA License # 68676) will not apply the herbicide when winds are over 5 mph, when the wind direction would carry the herbicide in the specific direction of the river, or within 48 hours before or after precipitation is expected.

If you have any questions or require any additional information please feel free to contact me at 503-224-9560.

Sincerely,



Rhys Konrad
Planner

Enclosures: Herbicide Use Plan
May 3, 2006 email
Policy 19 of the Integrated Pest Management Program

c: Scott Burgess - Advanced American Construction
Kim Miller - City of Portland - BDS

GROUP

MACKENZIE

Civil Engineering
Structural Engineering
Transportation Planning

Architecture
Interior Design
Land Use Planning

Portland OR
Vancouver WA
Tacoma WA
Seattle WA

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800.865.7879
253.471.0081
206.749.9988

Client



Project
NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.

General Contractor
PERLO MCCORMACK PACIFIC
7190 SW Sandburg Rd.
Portland, Oregon 97223
Phone: (503) 624-2090
FAX: (503) 639-4134

Landscape Architect
VEDIAN ENVIRONMENTAL
DESIGN
813 SW Alder
Mezzanine B
Portland Oregon 97205
Phone: (503) 222-1639
FAX: (503) 222-1853



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REVISIONS:			
NO.	REVISIONS	REVISION DATE	CLOSING DATE
1	X	08.16.05	
2	X	IN PROGRESS	

SHEET TITLE:
UTILITY PLAN

DRAWN BY: R.H.

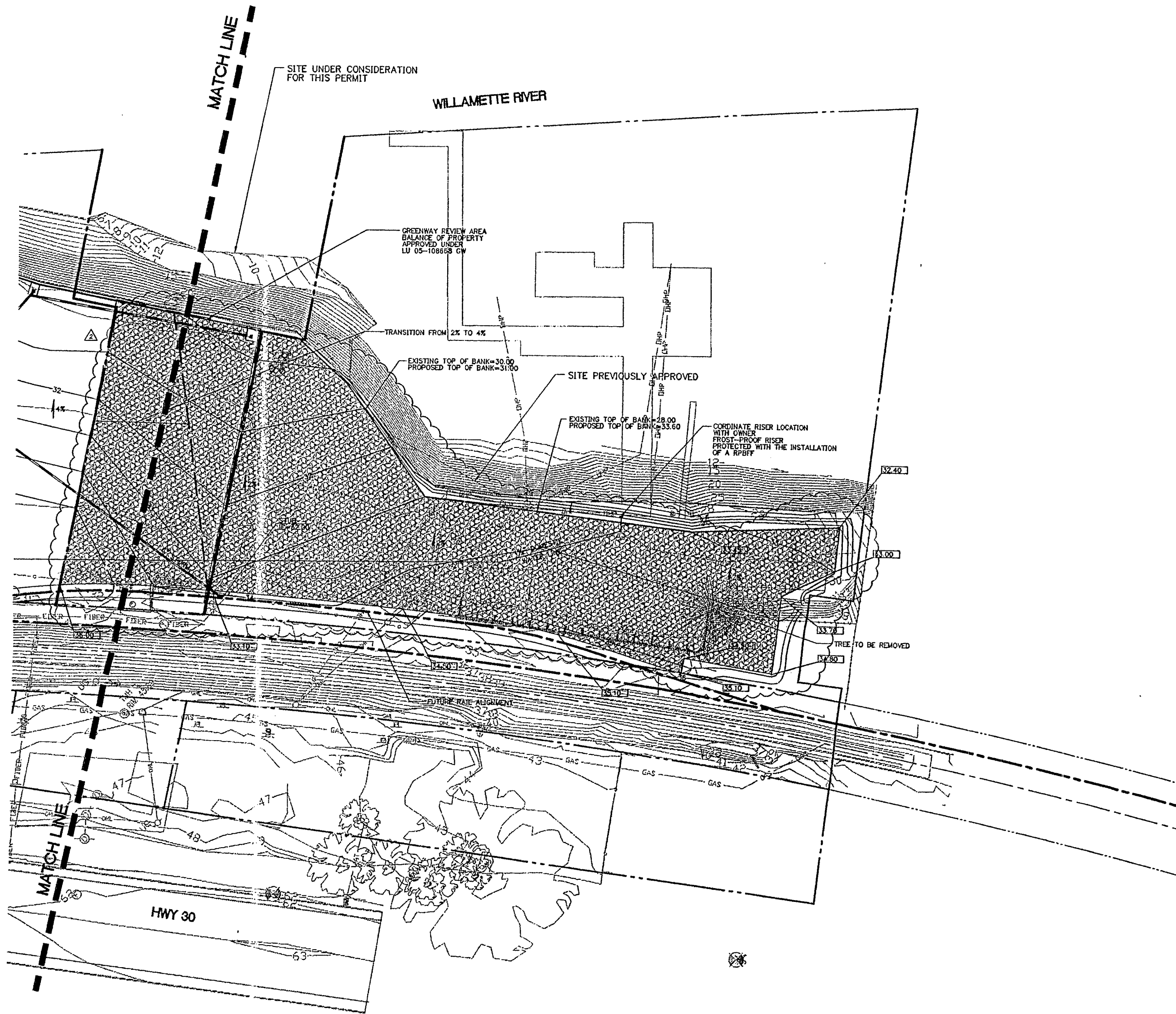
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JOB NO. 2040378.00

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UTM23-12060-0238 PLAN 02/04/06 10:27 1:30



TRUE NORTH PROJECT NORTH

GRADING PLAN - SOUTH
1" = 30'-0"

GRADING NOTES

SEE SHEET 2.2A FOR GRADING NOTES AND LEGEND

GRADING REVISION

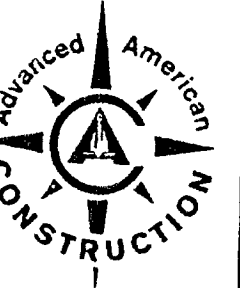
THE RAIL LINE IS NOT GETTING CONSTRUCTED AT THIS TIME. IT WILL BE PUT IN AT AN UNDETERMINED TIME IN THE FUTURE. AS A RESULT, THIS REVISION SHOWS A REDUCTION IN FILL AT THIS TIME. THIS REVISION SHOWS THE GRADES AT THE RIVERBANK BEING HELD FOR THE ORIGINALLY APPROVED PLANS, AND GRADING BACK TO THE BACK OF GRAVEL AREA AT 2% INSTEAD OF THE ORIGINAL 4% TO 5%. THE AREA OF GRAVEL WILL REMAIN IDENTICAL.

AT THE TIME THAT THE RAIL IS TO BE CONSTRUCTED, NEW PERMITS WILL BE OBTAINED, AND THE SITE WILL BE CONSTRUCTED TO THE ORIGINALLY APPROVED PLANS.

THIS REVISION RESULTS IN NO GRADING CHANGES WITHIN THE 100-YEAR FLOOD PLAIN. THERE WILL NOW BE LESS FILL ABOVE THE 100-YEAR FLOOD PLAIN THAN ORIGINALLY PERMITTED.

GROUP MACKENZIE
Architecture
Interior Design
Land Use Planning
Civil Engineering
Structural Engineering
Transportation Planning
Portland OR 503.224.0650
Seattle WA 206.474.0651
Tacoma WA 253.474.0651

Client



Project
**NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.**

General Contractor
PERLO MCGOWAN PACIFIC
7190 SW Sandburg Rd.
Portland, Oregon 97223
Phone: (503) 824-2090
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Landscape Architect
**WILSON ENVIRONMENTAL
DESIGN**
815 SW Alder
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Portland Oregon 97205
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2	ISSUED FOR CONSTRUCTION
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9	ISSUED FOR CONSTRUCTION
10	ISSUED FOR CONSTRUCTION

SHEET TITLE:
**GRADING/UTILITY
PLAN SOUTH**

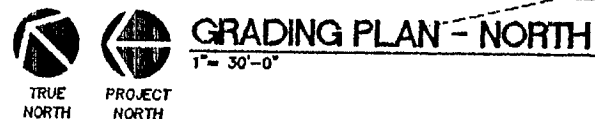
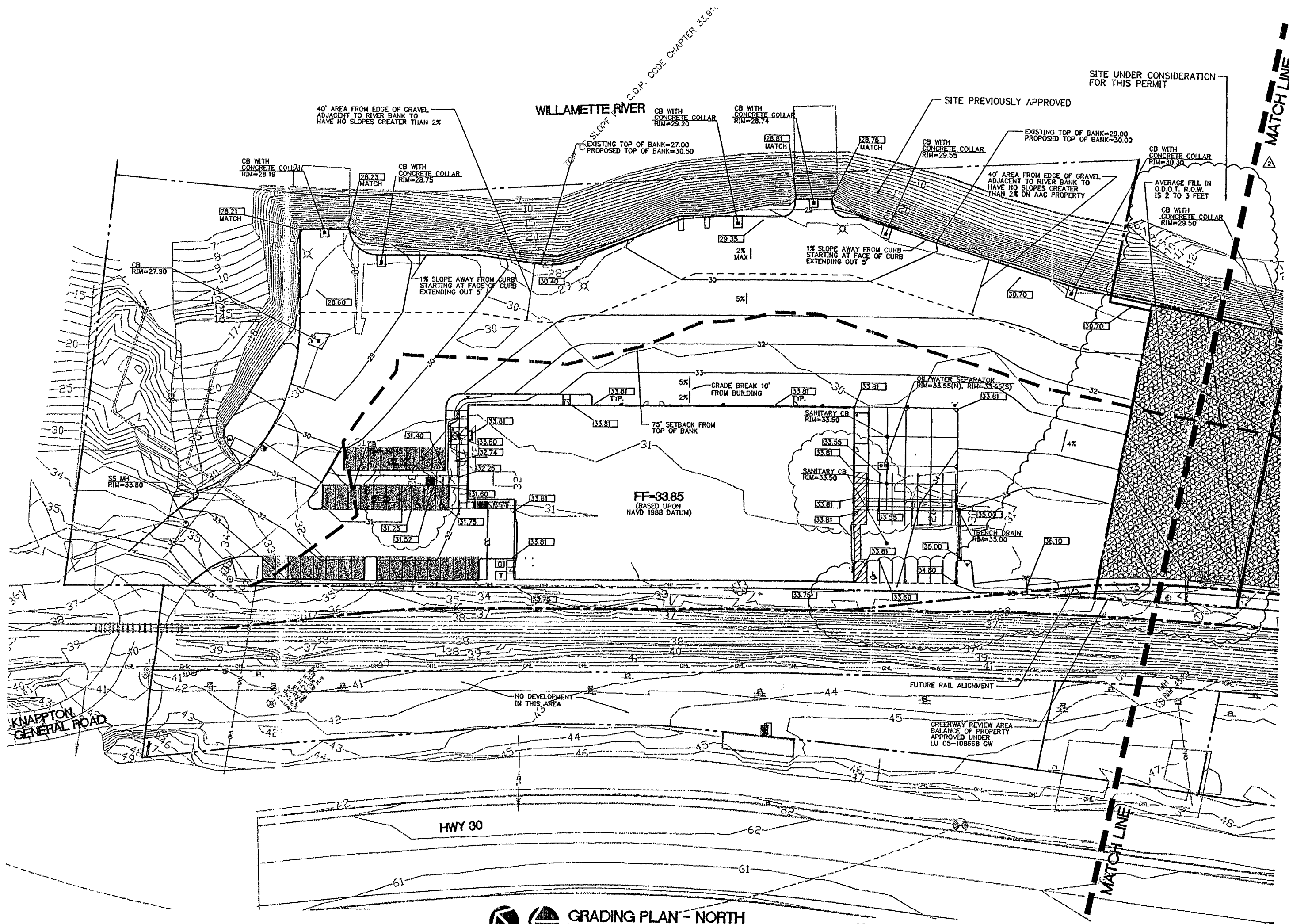
DRAWN BY: R.H.
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JOB NO. 2040378.00

REVISED 08.24.05
CONSTRUCTION SET : 08.16.05

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GRADING PLAN - NORTH
1" = 30'-0"

FLOOD ELEVATION SUMMARY

THE FEMA MAPS OF OCTOBER 2004 AND EARLIER ARE BASED ON A DATUM THAT IS 3.5 FEET DIFFERENT FROM THE SURVEY DATUM USED BY OTAK FOR THIS SURVEY.
THE SURVEY DATUM USED BY OTAK IS 2.125 FEET ABOVE THE CITY DATUM. IN NOVEMBER 2004, FEMA SWITCHED DATUMS TO THE SAME ONE USED IN THIS SURVEY.
THIS DATUM IS THE NAVD 1988 DATUM. ALL PROPOSED SITE ELEVATIONS, INCLUDING BUILDING FF ARE BASED ON THE NAVD 1988 DATUM.
THE ORDINARY HIGH WATER ELEVATION IS AT AN ELEVATION OF 20.2 FEET, BASED ON THE NAVD 1988 DATUM.
ON THIS SITE SURVEY, THE 100 YEAR FLOOD ELEVATION (FROM FEMA) IS AT AN ELEVATION OF 31.0 FEET.
THE 1996 FLOOD ELEVATION IS AT AN ELEVATION OF 31.63 FEET ON THE SITE SURVEY. THE BUILDING MUST BE SET AT LEAST 2 FEET ABOVE THIS BY CODE. THE FINISHED FLOOR HAS THEREFORE BEEN SET TO 33.65 FEET.
CUT AND FILL MUST BE BALANCED BELOW THE 1996 FLOOD ELEVATION OF 31.63 FEET. ANY CUT OR FILL ABOVE THIS ELEVATION DOES NOT COUNT TOWARDS THE FLOODPLAIN CUT/FILL BALANCE REQUIREMENTS.

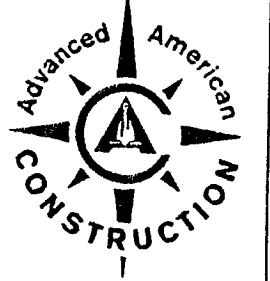
LEGEND

- 33 — PROPOSED FINISHED CONTOUR GRADE
- 33 — EXISTING CONTOUR GRADE
- 33.00 PROPOSED SPOT GRADE
- HEAVY TRUCK TRAFFIC PAVING SECTION
4" AC(2 LIFTS) OVER 6" BASE AGGREGATE
- LIGHT PAVING SECTION
2" AC OVER 4" BASE AGGREGATE
- EQUIPMENT MANEUVERING AREA
GRAVEL SECTION 6" OF 3/4"-1"
- TW GROUND ELEVATION AT TOP OF WALL
- 8W GROUND ELEVATION AT BOTTOM OF WALL

GRADING NOTES

- ROUGH GRADING: BRING ALL FINISH GRADES TO APPROXIMATE LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. GRADE TO UNIFORM LEVELS OF SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. ROUGH GRADE TO ALLOW FOR DEPTH OF CONCRETE SLABS, WALKS, AND THEIR BASE COURSES. GRADE FOR PAVED DRIVES AND PAVED PARKING AREAS AS INDICATED AND SPECIFIED HEREIN, AND PROVIDE FOR SURFACE DRAINAGE AS SHOWN, ALLOWING FOR THICKNESS OF SURFACING MATERIAL.
- FINISH GRADING: AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER CRAFTS HAS BEEN COMPLETED, REFINISH AND COMPACT AREAS WHICH HAVE SETTLED OR BROOD TO BRING TO FINAL GRADES.
- ROUGH GRADE AT PAVED OR LANDSCAPED AREAS: ± 0.1 FT.
FINISH GRADE PRIOR TO PLACING FINAL SURFACING: ± 0.05 FT.
- EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER CONSTRUCTION OF REQUIRED BACKFILLING MATERIAL. EXCAVATOR(S) MUST COMPLY WITH O.R.S. 737.541 THROUGH 737.571; EXCAVATOR(S) SHALL NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS 72 HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGES TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- EFFECTIVE EROSION CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE CITY OF PORTLAND REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
- EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE SO ROUTED THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
- SITE TOPSOIL SHALL BE STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING.
- THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY OTAK, AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH HIS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION. ELEVATIONS ARE BASED ON NAVD 1988 DATUM.
- CONTRACTOR TO COORDINATE GRADES AT ENTRANCE WITH ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
- 2% MAXIMUM SLOPE AT ALL HANDICAP PARKING SPACES.
- 5% MAX SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC ACCESS AND BUILDING ENTRANCES.
- RAIL DESIGN BY OTHERS.

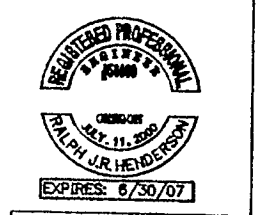
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Vancouver WA 98601
Tacoma WA 98401
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Project
**NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.**

General Contractor
PERLO MCCORMACK PACIFIC
7190 SW Sandburg Rd.
Portland, Oregon 97223
Phone: (503) 624-2090
FAX: (503) 639-4134

Landscape Architect
**VEDIAN ENVIRONMENTAL
DESIGN**
813 SW Alder
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REVISIONS:	REVISION	REVISION DATE
1	08.16.05	
2	IN PROGRESS	

SHEET TITLE
**GRADING PLAN
NORTH**

DRAWN BY: R.H.
CHECKED BY:
SHEET

C2.2a

JOB NO. 2040378.00

REVISOR 08.24.05
CONSTRUCTION SET : 08.16.05



Oregon

Theodore Kulongoski, Governor

RECEIVED

JAN 27 2006

Department of Environmental Quality

Northwest Region Portland Office

2020 SW 4th Avenue, Suite 400

Portland, OR 97201-4987

(503) 229-5263

FAX (503) 229-6957

TTY (503) 229-5471

January 25, 2006

Scott A. Burgess
Advanced American Construction Group, Inc.
PO Box 1630
Oregon City, OR 97045-0630

Re: Reissue of coverage under the Construction Stormwater General Permit – NPDES 1200-C
ORR109296
File No.: 113595
Site: NEW FACILITY FOR AAC
MULTNOMAH County

The Oregon Department of Environmental Quality (DEQ) has received your renewal application and fees for re-registration for coverage under the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Discharge Permit 1200-C (permit). DEQ is approving your re-registration under the permit. Please be aware that in addition to the fees submitted with this application, you will be assessed an annual fee for each additional year of construction activity.

On December 28, 2005 DEQ adopted a revised permit. This permit has a term of five years and it expires on November 30, 2010, regardless of when you apply for registration.

Important Permit Provisions

Please review your copy of the permit carefully. For all projects the permit:

- Prohibits visible or measurable quantities of sediments from leaving the construction site and entering directly into surface waters, or to conveyance systems that discharge to surface waters, and prohibits violations of the state's in-stream water quality standards. If this occurs, permittees are required to take corrective actions to stop the discharge to surface waters and submit an Action Plan outlining the corrective actions taken.
- Requires permittee to implement Sediment and Erosion Control Plan that meets new best management practices.
- Requires daily inspections of erosion control measures when runoff is occurring.
- Requires the permittee to record all monitoring and inspections and to keep all records on site and updated.
- Requires all erosion control measures remain in place throughout the duration of construction project.

For construction projects involving 5 acres or more:

- Beginning June 1, 2006, permit applications and the Erosion and Sediment Control Plans will be subject to a 14-day public review period.

For construction projects that discharge to 303(d) listed water bodies for turbidity (water clarity) or sedimentation or to water bodies covered under state Total Maximum Daily Load pollution limits:

- Beginning October 1, 2006, permittees must meet one of the following requirements:
 - Conduct weekly stormwater runoff sampling for turbidity when runoff is occurring, or



AAC000345

- Implement additional best management practices on the site to treat, control or prevent sediment discharges to "impaired" water bodies.

A map and table identifying the listed water bodies and affected river miles is available on DEQ's Web site at: <http://www.deq.state.or.us/wq/wqpermit/stormwaterhome.htm>.

For phased projects:

- Submit a Sediment and Erosion Control Plan for any phases not submitted with your original application to this regional DEQ office (Attention: Stormwater) at least 30 days prior to commencement of construction activities. The plan will be reviewed, and if acceptable, you will be notified of approval either in writing or by e-mail if your e-mail address is on file with DEQ.

Legal Owner Responsibilities

If during project development, legal responsibility shifts from the present permittee (you) to another party, this permit must be transferred to the new responsible party. There is a filing fee associated with permit transfer, as well as a one page application that must be submitted to DEQ.

Permit Termination Process

Be sure to submit the Permit Termination Request Form (*Notice of Termination Form*) to this regional DEQ office when your construction activity is completed. If a Termination Form is not received, you **will be billed** the annual fee for each additional year this permit remains in effect.

Permit coverage may be terminated when the following conditions are met:

- The permittee has constructed and completed all of the construction activities authorized by this permit --
 - The site is stabilized, i.e. landscaped with vegetation growing, and no exposed soil is present,
 - No further grading or soil disturbances are occurring, and
 - Temporary erosion and/or sediment controls have been removed and properly disposed, or
- The permittee is selling individual home lots of less than one acre --
 - The utilities, roads, and initial grading are complete, and
 - Temporary seeding has occurred, vegetation is growing and no exposed soil is present, and
 - Temporary erosion and/or sediment controls have been removed and properly disposed.

Finally, this permit does not authorize excavation or fill in state waterways, including wetlands, and does not replace the requirement for receiving authorization to do this type of work under Section 404 of the Clean Water Act.

Please check the DEQ website at <http://www.deq.state.or.us/wq/wqpermit/stormwaterhome.htm> for forms or information. If you have any questions about this permit, please contact Dennis Jurries in our Northwest Region Office at (503) 229-5937 or e-mail at jurries.dennis@deq.state.or.us.

Sincerely,



Dennis Jurries, PE
NWR Storm Water Engineer

Enclosure
cc: File



**GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STORMWATER DISCHARGE PERMIT**

Oregon Department of Environmental Quality
811 SW Sixth Avenue, Portland OR 97204
Telephone: (503) 229-5279 or 1-800-452-4011 (toll free in Oregon)

Issued pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act

REGISTERED TO: 1/12/2006	GEN 12C MULTNOMAH/NWR
File No.: 113595	ORR109296

Advanced American Construction Group, Inc.
PO Box 1630
Oregon City, OR 97045-0630

Site: NEW FACILITY FOR AAC

SOURCES COVERED BY THIS PERMIT:

Construction activities including clearing, grading, excavation, and stockpiling that will disturb one or more acres and may discharge to surface waters or conveyance systems leading to surface waters of the state. Also included are activities that disturb less than one acre that are part of a common plan of development or sale if the larger common plan of development or sale will ultimately disturb one acre or more and may discharge to surface waters or conveyance systems leading to surface waters of the state. Oregon Administrative Rules (OAR) 340-045-0015 and 0033(5) require all owners or operators responsible for these sources to register under this permit or obtain an individual permit.

This permit does not authorize in-water or riparian work regulated by the Federal Clean Water Act Section 404 permit program. These types of activities are regulated by the Oregon Department of State Lands, U.S. Army Corp of Engineers, and the Department of Environmental Quality Section 401 certification program. Unless specifically authorized by this permit, by another National Pollutant Discharge Elimination System (NPDES) or Water Pollution Control Facilities (WPCF) permit, or by OAR, any other direct or indirect discharge to waters of the state is prohibited, including discharges to an underground injection control (UIC) system.



Lauri Aunan, Administrator
Water Quality Division

Issued: December 28, 2005
Expiration Date: November 30, 2010

PERMITTED ACTIVITIES

Until this permit expires, is modified or revoked, the permit registrant is authorized to construct, install, modify, or operate erosion and sediment control measures and stormwater treatment and control facilities, and to discharge stormwater and certain specified non-stormwater discharges to surface waters of the state in conformance with all the requirements, limitations, and conditions set forth in the permit including attached schedules as follows:

	Page
Schedule A - Limitations and Controls for Stormwater and Non-Stormwater Discharges	3
Schedule B - Minimum Monitoring Requirements	12
Schedule C - Compliance Schedule.....	14
Schedule D - Special Conditions	15
Schedule E - (Not Applicable)	NA
Schedule F - General Conditions	18

PERMIT REGISTRATION

1. Renewal Requirements

- a. Activities Registered Under the Previous 1200-C Permit (issued February 2001).
 - i. Permit registrants must submit a complete permit renewal application to the department prior to the permit expiration date of December 31, 2005 to ensure uninterrupted permit coverage under this permit for construction activities continuing beyond December 31, 2005.
 - ii. An Erosion and Sediment Control Plan (ESCP) submitted prior to December 31, 2005 is not required to be resubmitted to the department or Agent except as required in Schedule C.
 - iii. Permit registrants that do not submit a renewal application by the previous 1200-C expiration date must submit a new application for coverage under this permit and follow condition #2 below.
- b. Renewal of Permit Registration under this Permit (December, 2005)
 - i. To maintain continuous permit registration during the renewal process, a permit registrant must submit a complete renewal application with a revised ESCP, if applicable, to the department 180 days prior to this permit expiration unless otherwise approved by the department.
 - ii. If the department fails to act on the application by the expiration date, permit registration is administratively extended until the department takes action on the application.
 - iii. If registration under the renewed permit is not required or appropriate, the department will notify the applicant.

2. New Construction Activities

- a. Applicants seeking registration under this permit must:
 - i. Submit a complete department-approved application form with an ESCP that complies with the permit requirements to the department or Agent at least thirty (30) days prior to the planned soil disturbance unless otherwise approved by the department.
 - ii. Prior to beginning any soil disturbance activity, receive written notice from the department or Agent that permit registration has been approved.
- b. The department or Agent will register the applicant after the ESCP has been approved by the department or Agent. For construction activities that disturb five (5) or more acres, a public notice period is required as provided in Condition 4 below. The ESCP is approved when the department or Agent provides written notice of approval.
- c. If the application for registration is denied by the department or Agent, a construction activity cannot be registered under this permit, or if the applicant does not wish to be regulated by this permit, the applicant may apply for an individual permit in accordance with OAR 340-045-0030.

3. Transfer of Permit Registration

To transfer permit registration, an owner or permit registrant must submit a department-approved transfer form prior to permit expiration and prior to transfer of ownership or operation.

4. Public Review Period on Application and ESCP

Permit registrants that submit an application and ESCP for construction activities that disturb five (5) or more acres after June 1, 2006 will be subject to a 14-day public review period before permit registration by the department or Agent. The public review period will begin after the department or Agent has determined that the application is complete.

SCHEDULE A LIMITATIONS AND CONTROLS FOR STORMWATER DISCHARGES

1. Water Quality Standards

- a. The permit registrant must not cause a violation of instream water quality standards.
- b. If the permit registrant develops, implements, and revises its ESCP in compliance with Schedule A of this permit, the department assumes that the discharges authorized by this permit will not cause a violation of water quality standards unless the department obtains evidence to the contrary.
- c. In instances where the department determines that the permit registrant's stormwater discharges are causing a violation of water quality standards, the department may take enforcement action for violations of the permit and will require the permit registrant to do one or more of the following:
 - i. Develop and implement an Action Plan, which is considered an addendum to the ESCP, describing ESCP modifications that are necessary to prevent and control erosion and sediment discharges to meet water quality standards;
 - ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is meeting water quality standards; or
 - iii. Curtail stormwater pollutant discharges to the extent possible and submit an individual permit application.

2. Water Quality Requirements for TMDL and 303(d) Listed Waterbodies

In addition to other applicable requirements of this permit, if sediment or turbid water from a permit registrant's construction project has the potential to discharge into waterbodies that are listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that have an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity, the permit registrant must implement one of the two following sets of actions, in accordance with Schedule C.

- a. Option #1: Collect and analyze samples for turbidity in stormwater runoff from the construction site as required by condition B.2. (p. 12) and compare the results to the benchmark value of 160 Nephelometric Turbidity Units (NTUs). The benchmark is used to determine if best management practices are effective; it is not an effluent limit. If any stormwater sample exceeds the benchmark, then the permit registrant must evaluate the best management practices (BMPs) and the adequacy of the ESCP and take corrective actions. If after such actions have been implemented and sample results still exceed the 160 NTU benchmark, the requirements of Option #2 below must be followed, and the permit registrant must submit an Action Plan to the department identifying the selected BMP(s) that will be implemented and the rationale for choosing the selected BMP(s).
- b. Option #2: In addition to the applicable BMPs required by condition A.7., implement one or more of the following BMPs to control and treat sediment and turbidity:
 - i. Compost berms, compost blankets, or compost socks;
 - ii. Erosion control mats (rolled or blown);
 - iii. Tackifiers used in combination with perimeter sediment control BMPs;
 - iv. Established vegetated buffers sized at 50 feet plus 25 feet per 5 degrees of slope;
 - v. Water treatment by electro-coagulation, chemical flocculation, or filtration; or
 - vi. Other substantially equivalent sediment or turbidity BMP approved by the department.

The selected BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must also be provided.

3. Performance Requirements

- a. Prevent Discharge of Significant Amounts of Sediment. The permit registrant must prevent the discharge of significant amounts of sediment to surface waters or conveyance systems leading to surface waters. Significant amounts of sediment result from the actions or inactions of the permit registrant at a site and result in visual indications that sediment has left or is likely to leave the site. The following conditions describe significant amounts of sediment:
 - i. Earth slides or mud flows;
 - ii. Concentrated flows of stormwater such as rills, rivulets or channels that cause erosion when such flows are not filtered or settled to remove sediment;
 - iii. Turbid flows of stormwater that are not filtered or settled to remove turbidity;
 - iv. Deposits of sediment at the construction site in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediment controls due to lack of maintenance or inadequate design are considered unprotected;
 - v. Deposits of sediment from the construction site on public or private streets outside of the permitted construction activity; or
 - vi. Deposits of sediment from the construction site on any adjacent property outside of the permitted construction activity.
- b. Corrective Action. If significant amounts of sediment or turbidity (as described in A.3.a above) are visibly detected in: 1) the discharge to a conveyance system leading to surface waters; 2) the discharge to surface waters 50 feet downstream; or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected, the permit registrant must:
 - i. Immediately, but no later than 24 hours after initial detection, take corrective actions or implement additional effective BMPs until the significant amounts of sediment or turbidity are no longer visually detectable and to ensure that the requirements of Conditions A.1. and A.3.a. are met.
 - ii. Evaluate the ESCP to determine the cause of the discharge.
 - iii. Document in the inspection records the corrective actions taken.
 - iv. Submit an Action Plan to the department within ten (10) calendar days of the discharge identifying the correction actions taken to cease the discharge, if such actions require a change to the ESCP or a change in the method(s) of implementing the ESCP, (e.g., increased inspection frequency). Approval of the Action Plan by the department prior to implementation of corrective actions is not required. The Action Plan must be kept onsite as per condition B.3., p. 13.
- c. Authorized Stormwater Discharges. Subject to compliance with the terms and conditions of this permit, the permit registrant is authorized to discharge the following:
 - i. Stormwater associated with construction activity that is authorized by this permit.
 - ii. Stormwater from support activities at the construction site (e.g., concrete or asphalt operations, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
 - (1) The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
 - (2) The support activity is not a commercial operation serving multiple unrelated construction projects by different permit registrants, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
 - (3) Appropriate controls and measures are identified in an ESCP covering the discharges from the support activity areas.

- d. Allowable Non-Stormwater Discharges. This permit authorizes the following non-stormwater discharges to surface water provided they are identified in the ESCP and all necessary controls are implemented to minimize sediment transport:
- i. Discharges from fire-fighting activities;
 - ii. Fire hydrant and potable water flushing (refer to department guidance);
 - iii. Waters used to wash vehicles where detergents or hot water are not used;
 - iv. Potable water including uncontaminated water line flushing;
 - v. Routine external building wash down that does not use detergents or hot water;
 - vi. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents or hot water are not used;
 - vii. Uncontaminated air conditioning or compressor condensate;
 - viii. Construction dewatering activities;
 - ix. Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
 - x. Landscape irrigation.

For other non-stormwater discharges, the permit registrant may ask the department to determine if another permit is needed. The disposal of wastes to surface water or onsite is not authorized by this permit. The permit registrant must submit a separate permit application for such discharges.

4. Erosion and Sediment Control Plan (ESCP) and Action Plan Preparation and Submittal

- a. Responsibilities of Permit Registrant. The permit registrant must ensure that an ESCP is prepared and revised as necessary for the construction activity regulated by this permit and submitted to the department or Agent as required by this permit.
- b. Qualifications to Prepare ESCP.
 - i. For construction activities disturbing 20 or more acres, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society).
 - ii. If engineered facilities such as sedimentation basins or diversion structures for erosion and sediment control are required, the ESCP must be prepared and stamped by an Oregon Registered Professional Engineer.
- c. Submittal of ESCP and if Required, Action Plans.
 - i. The permit registrant must submit the ESCP to the department or Agent prior to obtaining registration under this permit (see Permit Registration, Condition 2 of this permit, p. 2).
 - ii. If ESCP revisions are made after permit registration is approved, the permit registrant must submit revisions to the ESCP in the form of an Action Plan to the department, or if corrective actions are required by A.3.b., p. 4, within 24 hours of initial detection of the stormwater discharge.
 - (1) The Action Plan is considered an addendum to the ESCP.
 - (2) Approval of the Action Plan by the department prior to implementation of corrective actions is not required.
 - (3) An Action Plan may be required due to changes in the project design, local conditions, project schedule (e.g., schedule delays postpone earthwork to wet weather season so additional controls are needed), weather conditions or other appropriate reasons.
 - (4) The Action Plan must clearly identify any necessary changes (such as type or design) to the BMPs identified in the ESCP, their location, maintenance required, and any other revisions necessary to prevent and control erosion and sediment runoff.

- iii. If the permit registrant does not receive a response on the Action Plan from the department or Agent within ten (10) days of the Action Plan receipt, the proposed revisions are deemed approved.
- iv. The department or Agent may require the permit registrant to submit an Action Plan at any time if the ESCP is inadequate to prevent the discharge of significant amounts of sediment or turbidity to surface waters or to conveyance systems that discharge to surface waters. The permit registrant must submit the Action Plan according to the timeframe specified by the department or Agent.

5. ESCP Implementation

- a. The permit registrant must ensure that the ESCP is implemented for the construction activity regulated by this permit. Failure to implement any portion of the ESCP constitutes violation of the permit on the part of the permit registrant.
- b. The permit registrant must ensure that the ESCP is implemented according to the following sequence:
 - i. Before Construction.
 - (1) Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones and vegetation areas to be preserved.
 - (2) Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas.
 - (3) Hold a pre-construction meeting of project construction personnel that includes the inspector required by condition A.6.b. to discuss of erosion and sediment control measures and construction limits.
 - ii. During and After Construction.
 - (1) Site Access Areas (construction entrances, roadways equipment parking areas).
Stabilize site entrances and access roads prior to earthwork.
 - (2) Install Sediment Control Measures.
Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers which must be in place before vegetation is disturbed.
 - (3) Non-Stormwater Pollution Control Measures.
Concurrent with establishing construction access controls and sediment controls, the permit registrant must establish material and waste storage areas, concrete truck and other concrete equipment washout areas and other non-stormwater controls prior to the start of construction activities.
 - (4) Runoff Control.
Stabilize stream banks and construct the primary runoff control measures to protect areas from concentrated flows.
 - (5) Land Clearing, Grading and Roadways.
 - (a) Begin land clearing, excavation, trenching, cutting or grading after installing applicable sediment and runoff control measures.
 - (b) Provide appropriate erosion and sediment control BMPs for all roadways including gravel roadways.
 - (c) Install additional control measures as work progresses as needed.
 - (6) Surface Stabilization (temporary and permanent seeding, mulching).
Apply temporary or permanent soil stabilization measures immediately on all disturbed areas as grading progresses.
 - (7) Construction and Paving (install utilities, buildings, paving, etc.).
Erosion and sediment control measures must remain in place for the duration of construction, including protection for active storm drain inlets and appropriate non-stormwater pollution controls.
 - (8) Final Stabilization and Landscaping.

Provide permanent erosion prevention measures on all exposed areas and remove all temporary control measures as areas are stabilized.

6. ESCP Elements

The permit registrant must ensure that the ESCP contains the following elements:

- a. Local Government Requirements. Include any procedures necessary to meet applicable local government erosion and sediment control or stormwater management requirements.
- b. Inspections.
 - i. Inspections must be conducted by a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality, is knowledgeable in the correct installation of the erosion and sediment controls, and is able to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.
 - ii. Identify the person(s) or title and experience of the personnel that will conduct inspections. Provide the following for each person:
 - (1) Name;
 - (2) Contact phone number and, if available, e-mail address; and
 - (3) Description of experience and training.
- c. Narrative Site Description.
 - i. Nature of the construction activity, including a proposed timetable for major activities;
 - ii. Estimates of the total area of the permitted site and the area of the site that is expected to undergo clearing, grading or excavation;
 - iii. Nature of the fill material to be used, the insitu soils, and the erosion potential of such soils; and
 - iv. Names of the receiving water(s) for stormwater runoff.
- d. Site Map.
 - i. The site map kept on site must represent the actual BMP controls being used onsite, particularly those BMPs identified in the most recent Action Plan(s);
 - ii. The site map must show sufficient roads and features for the department or Agent to locate and access the site;
 - iii. Total property boundary including surface area of the development;
 - iv. Areas of total soil disturbance (including, but not limited to, showing cut and fill areas and pre and post development elevation contours);
 - v. Drainage patterns before and after finish grading;
 - vi. Location(s), size, and type of discharge point(s);
 - vii. Areas used for the storage of soils or wastes;
 - viii. Areas where vegetative practices are to be implemented;
 - ix. Location of all erosion and sediment control measures or structures;
 - x. Location of impervious structures after construction is completed. Include buildings, roads, parking lots, outdoor storage areas, etc., if any;
 - xi. Springs, wetlands and other surface waters located on-site;
 - xii. Boundaries of 100-year floodplains if determined and easily available;
 - xiii. Location of stormwater discharge points to receiving water(s) or stormwater conveyance systems if applicable;

- xiv. Location of storm drain catch basins and the location of catch basins with inlet protection, if applicable and a description of the type of catch basins used (e.g., curb inlet, field inlet, grated drain, combination, etc.);
- xv. Location of septic drain fields if applicable;
- xvi. Location of existing or proposed drywells or other UICs if applicable;
- xvii. Location of drinking water wells;
- xviii. Details of sediment and erosion controls including installation techniques; and
- xix. Details of detention ponds, storm drain piping, inflow and outflow details.

e. **Implementation Schedule and Description of BMPs**

Include in the ESCP the implementation schedule and description of BMPs to be used at the site. See Condition A.5. for implementation requirements and conditions A.7. and A.8. for minimum BMP requirements.

7. Required BMPs

The following controls and practices, if appropriate for the site, are required in the ESCP and must be implemented according to the schedule in the ESCP. If the permit registrant determines that any of these controls or practices is not appropriate, the rationale for the change must be provided in the ESCP.

a. **Wet Weather BMPs.**

- i. Generally construction activities must avoid or minimize excavation and bare ground activities that occur on slopes greater than five (5) percent during the period of October 1 through May 31.
- ii. Temporary stabilization of soils must be installed at the end of the shift before a holiday or weekend if needed based on weather forecast.

b. **Runoff Controls.**

In developing runoff control practices, at a minimum the following BMPs must be considered: slope drains, energy dissipaters, diversion of run-on, temporary diversion dikes, grass-lined channel (turf reinforcement mats), trench drains, drop inlets, and check dams.

c. **Erosion Prevention Methods.**

In developing erosion prevention methods, at a minimum the following BMPs must be considered:

- i. **Clearing and Grading Practices.**
 - (1) Provide structural erosion prevention during grading and earthwork-surface roughening and prevent erosion on graded surfaces.
 - (2) Top-soiling, temporary seeding and planting, permanent seeding and planting, mycorrhizae/biofertilizers, mulches, compost blankets, erosion control blankets and mats, soil binders, soil tackifiers, sodding vegetative buffer strips, and protection of trees with protective construction fences.
- ii. **Wind Erosion/Dust Control.**
 - (1) All erosion and sediment controls not in the direct path of work must be installed before any land disturbance.
 - (2) Whenever practicable, clearing and grading must be done in a phased manner to prevent exposed inactive areas from becoming a source of erosion.
- iii. **Vegetative Erosion Control Practices.**
 - (1) Preserve existing vegetation and re-vegetate open areas when practicable before and after grading or construction.

- (2) Biotechnical erosion control measures: live staking, live fascines and brush wattles, stabilization mats, pole planting, brush box, fascines with sub-drains, live pole drains, and brush packing or live gully fill repair.
- (3) All temporary sediment control practices must not be removed until permanent vegetation or other cover of exposed areas is established.
- (4) If vegetative seed mix is used, identify the type of seed mix (percentages of the various seeds of annuals, perennials and clover).

d. Sediment Controls.

i. Peripheral Erosion and Sediment Controls.

- (1) Sediment control must be provided along the site perimeter and at all operational internal storm drain inlets at all times during construction.
- (2) Active inlets must be considered part of the site perimeter because they provide an avenue for sediment and other pollutants to leave the site.

ii. Erosion Control Practices.

In developing sediment control practices, include in the ESCP installation details and at a minimum the following must be considered: sediment fences, sand bag barrier, gravel bag berm, earth dikes, drainage swales, check dams, subsurface drains which daylight to the surface, pipe slope drains, rock outlet protection, sediment traps, rock and brush filters, compost berm/compost sock, fiber rolls/wattles, storm drain inlet protection, and temporary or permanent sedimentation basins.

iii. Reducing Sediment Tracking.

- (1) Prior to any land disturbing activities each site must have graveled, paved, or constructed entrances, exits and parking areas with exit tire wash to reduce the tracking of sediment onto public or private roads.
- (2) All unpaved roads located onsite must be graveled. Other effective erosion and sediment control measures either on the road or down gradient may be used in place of graveling.
- (3) When trucking saturated soils from the site, either water-tight trucks must be used or loads must be drained on-site until dripping has been reduced to minimize spillage on roads.

e. Non-Stormwater Pollution Controls.

Non-Stormwater Pollution Controls BMPs must be in-place throughout the grading and construction phases. In developing non-stormwater pollution control practices, at a minimum the following must be considered:

i. Pollution Prevention.

- (1) BMPs used to prevent pollution of stormwater or to treat stormwater from the following activities: dewatering and ponded water management, paving operation controls, temporary equipment bridge, illicit connection, and illegal discharge.
- (2) BMPs that will be used to prevent or minimize stormwater from being exposed to pollutants from spills, no discharge of concrete truck wash water, vehicle and equipment cleaning, vehicle and equipment fueling, maintenance, and storage, other cleaning and maintenance activities, and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations.

ii. Stockpile Erosion and Sediment Control Practices.

- (1) Stockpiles located away from the construction activity but still under the control of the permit registrant must also be protected to prevent significant amounts of sediment or turbid water from discharging to surface waters.
- (2) At the end of each workday the soil stockpiles must be stabilized, covered or other BMPs must be implemented to prevent discharges to surface waters.

- (3) In developing these practices, at a minimum the following must be considered: diversion of uncontaminated flows around stockpiles, use of cover over stockpiles, and installation of sediment fences around stockpiles
- iii. Solid Waste and Hazardous Materials Management.
 - (1) The department encourages the permit registrant to reuse and recycle construction wastes.
 - (2) Any use of toxic or other hazardous materials must include proper storage, application, and disposal.
 - (3) In developing these practices, at a minimum the following must be described in the ESCP and implemented where practical: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures; regular maintenance schedule for vehicles and machinery; and material delivery and storage controls, training and signage, material use, covered storage areas for waste and supplies.
 - (4) The permit registrant must manage hazardous wastes, used oils, contaminated soils, concrete management, sanitary waste management, liquid waste management, or other toxic substances discovered or generated during construction activities in accordance with state and federal regulations. In some cases, department approval for management and disposal may be required.
- f. Inspection and Maintenance.

To provide for continued performance, BMPs must be inspected before, during, and after significant storm events. During grading and construction, the permit registrant is responsible for maintaining the stormwater pollution control BMPs. The permit registrant must establish and promptly implement procedures for maintenance and repair of erosion and sediment control measures.

 - i. General Site Maintenance.
 - (1) Significant amounts of sediment that leave the site must be cleaned up within 24 hours and placed back on the site and stabilized or disposed of properly. In addition, the source(s) of the sediment must be controlled to prevent continued discharge within 24 hours. Any instream clean up of sediment must be performed according to requirements and timelines set by the Oregon Department of State Lands.
 - (2) Sediment must not be intentionally washed into storm sewers or drainage ways. Vacuuming or dry sweeping must be used to clean up released sediments.
 - (3) If fertilizers are used to establish vegetation, the application rates must follow manufacturer's guidelines and the application must be done in such a way to minimize nutrients discharging to surface waters.
 - ii. Maintenance of Erosion and Sediment Controls.
 - (1) For a sediment fence, the trapped sediment must be removed before it reaches one third of the above ground fence height.
 - (2) Other sediment barriers (e.g., biobags): the sediment must be removed before it reaches two inches of accumulation in any area above the sediment barrier(s).
 - (3) For catch basin protection, cleaning must occur when sediment retention capacity has been reduced by fifty percent.
 - (4) For a sediment basin, removal of trapped sediments must occur when design capacity has been reduced by fifty percent.
 - iii. Stormwater Treatment System Requirement.

If a stormwater treatment system (e.g., electro-coagulation, chemical flocculation, filtration, etc.) for sediment removal is employed, an operation and maintenance plan must be submitted to the department for approval before start up of the treatment system. Upon department approval of the plan, the permit registrant must implement the plan.

8. Additional BMP Requirements During Inactive Periods

- a. If all construction activities cease at the site for thirty (30) days or more, the entire site must be stabilized using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.
- b. On any significant portion of the site, if construction activities cease for fifteen (15) days or more, temporary covering with straw or compost mulch or other covering that is tackified to prevent soil or wind erosion must occur until work resumes.

SCHEDULE B MINIMUM MONITORING REQUIREMENTS

1. Visual Monitoring Requirement

- a. The following must be inspected by the permit registrant:
 - i. All areas of the site disturbed by construction activity to ensure that BMPs are in working order.
 - ii. Discharge point(s) identified in the ESCP for evidence of or the potential for the discharge of pollutants, and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable.
 - iii. BMPs identified in the ESCP and any ESCP revisions documented in Action Plan(s) to assess whether they are functioning properly.
 - iv. Locations where vehicles enter or exit the site for evidence of off-site sediment tracking.
 - v. Areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff.
- b. All ESCP controls and practices must be inspected visually according to the following schedule:

Site Condition	Minimum Frequency
1. Active period	Daily when stormwater runoff, including runoff from snow melt, is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility	Once to ensure that erosion and sediment control measure are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than seven (7) consecutive calendar days	Once every two (2) weeks.
4. Periods during which the site is inaccessible due to inclement weather	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.

2. Turbidity Monitoring Requirements for TMDL and 303(d) Listed Waterbodies per Option #1 in Condition A.2.a., p. 3.

In addition to the requirements in condition B.1. above, permit registrants discharging into waterbodies that are listed for turbidity or sedimentation on the most recently EPA approved Oregon 303(d) list or have an established TMDL for sedimentation or turbidity are subject to the following requirements if Option #1 (condition A.2.a.) is being followed:

Parameter	Minimum Frequency	Monitoring Points	Type of Sample ¹	Test Method ²
Turbidity (NTU)	At a minimum one stormwater sample that represents the flow and characteristics of the stormwater discharge must be collected at each monitoring point on a weekly basis when stormwater runoff is detectable.	All stormwater discharge points indicated on the site map see A.6.d.xiii., p. 7.	Grab	Field turbidimeter

¹ Occurring during regular working hours at the construction site.

² The permit registrant must use sampling procedures, testing methods and turbidity meter calibration methods approved by the department.

3. Recordkeeping Requirements

- a. Documentation of Visual Inspection. All visual inspections must be documented in writing as follows:
 - i. Inspection date and inspector's name.
 - ii. At the designated discharge location(s) inspections of the quality of the discharge for any turbidity, color, sheen, or floating materials.
 - (1) Inspect and record color and turbidity or clarity in: 1) the discharge to a conveyance system leading to surface waters, 2) the discharge to surface waters 50 feet downstream, or 3) the discharge in surface waters at any location where more than one-half of the width of the receiving surface waters is affected.
 - (2) For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with the surface waters. For a sheen or floating material, describe whether this is present or absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
 - iii. If a site is inaccessible due to inclement weather, record the inspections noted at a relevant discharge point or downstream location if practical.
 - iv. Location(s) of BMPs that need to be maintained, inspections of all BMPs, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and non-stormwater pollution (e.g., paints, oils, fuels, adhesives) controls.
 - v. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
 - vi. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
 - vii. Corrective action required and implementation dates.
- b. ESCP including Action Plan(s) Retained Onsite. A copy of the ESCP and the Action Plan must be retained on-site and made available on request to the department, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, the ESCP must be retained by the permit registrant but does not need to be at the construction site.
- c. Inspection and Monitoring Results. All inspection records and monitoring results must be kept on-site and maintained by the permit registrant, made available to the department, Agent, or local municipality upon request, and must include:
 - i. The construction site name as it appears on the registrant's permit and the file or site number.
 - ii. All Action Plans that describe reasons for required changes or modifications to the ESCP and/or other corrective measures implemented during the previous reporting period.
 - iii. Turbidity sampling results required by Condition B.2., p. 12 if applicable.
- d. Retention of Inspection and Monitoring Results for Three (3) Years:
 - i. All inspection records and monitoring results must be retained for at least three (3) years after project completion.
 - ii. In addition, these records must be delivered or made available to the department within three (3) working days of request.

SCHEDULE C COMPLIANCE SCHEDULE

Potential discharges into waterbodies that are on the most recent EPA-approved Oregon 303(d) list for turbidity or sedimentation or have a TMDL for turbidity or sedimentation

1. Permit registrants who obtained permit coverage prior to October 1, 2006 must:

- a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements in Condition A.2. by October 1, 2006.
- b. For future TMDLS or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

2. Permit registrants obtaining coverage after October 1, 2006 must:

- a. For EPA-approved TMDLs or 303(d) listings existing at the time permit application is made, comply with the requirements of Condition A.2. upon obtaining coverage under the permit. If Option #2 is selected, the BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit and the rationale for choosing the selected BMP(s) must also be provided.
- b. For future TMDLS or 303(d) listings approved by EPA after permit application is made, comply with the requirements in Condition A.2. no later than ninety (90) days after EPA-approval of the TMDL or 303(d) list.

SCHEDULE D SPECIAL CONDITIONS

1. In the event of any inconsistency between Schedules A through D and F, Schedules A through D will apply.
2. Registration under this permit does not relieve the permit registrant from all other permitting and licensing requirements. Prior to beginning construction activities, the permit registrant must obtain all other necessary approvals.
3. **Required Actions Prior to Termination of Permit Registration**
 - a. The following conditions must be met before permit registration is terminated:
 - i. There is no reasonable potential for discharge of a significant amount of construction related sediment or turbidity to surface waters.
 - ii. Construction materials, waste, and temporary erosion and sediment controls have been removed and disposed of properly. This includes any sediment that was being retained by the temporary erosion and sediment controls.
 - iii. All soil disturbance activities by the permittee have been completed and all stormwater discharges from construction activities that are authorized by this permit are eliminated.
 - iv. All temporary erosion and sediment controls have been removed and properly disposed.
 - v. All disturbed or exposed areas of the site must be fully stabilized as defined in Condition D.4 m. below.
 - b. The permit registrant must complete and submit a Notice of Termination form to the department or Agent after the conditions in D.3.a. above have been satisfied. The department or Agent will not act on a request for termination until all outstanding compliance issues are resolved.
4. **Permit-specific Definitions**
 - a. *Action Plan* means an addendum to the ESCP that describes ESCP modifications.
 - b. *Agent* means a governmental entity that has an agreement with the department to assist with implementation of this general permit.
 - c. *Best Management Practices or BMPs* means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, erosion and sediment control, source control, and operating procedures and practices to control site runoff, spillage or leaks, and waste disposal.
 - d. *Borrow Area* means the area from which material is excavated to be used as fill material in another area.
 - e. *Clean Water Act or CWA* means the Federal Water Pollution Control Act (FWPCA) enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.
 - f. *Department or DEQ* means the Oregon Department of Environmental Quality.
 - g. *Detention* means the temporary storage of stormwater to improve quality or reduce the volumetric flow rate of discharge or both.
 - h. *Dewatering* means the removal and disposal of surface water or groundwater for purposes of preparing a site for construction.
 - i. *Discharge Point* means the location where stormwater leaves the site. It includes the location where stormwater is discharged to surface water or a stormwater conveyance system.
 - j. *Erosion* means the movement of soil particles or rock fragments by water or wind.
 - k. *Erosion and Sediment Control BMPs* means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering,

filter fences, and sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

- l. *Erosion Prevention Methods* means a wide range of erosion prevention practices, materials and methods to be applied during earthwork activities including structural methods, techniques to prevent erosion on already graded surfaces, and biotechnical erosion control methods. The best way to control the discharge of sediment and related pollutants from a construction site is to prevent erosion from occurring in the first place.
- m. *Final Stabilization or Fully Stabilized* means the completion of all soil disturbing activities at the site by the permit registrant, and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) to prevent erosion.
- n. *Hazardous Materials* means the materials defined in 40 CFR part 302 Designation, Reportable Quantities, and Notification.
- o. *Local Government* means any county, city, town, or service district.
- p. *National Pollutant Discharge Elimination System or NPDES* means the national program under Section 402 of the Federal Clean Water Act for regulation of point source discharges of pollutants to waters of the United States.
- q. *Non-Stormwater Pollution Controls* means general site and materials management measures that directly or indirectly aid in minimizing the discharge of sediment and other construction related pollutants from the construction site.
- r. *Permit Registrant* means the owner or operator of the construction activity regulated by this permit who receives notice of registration under this general permit. Owners or operators may be individuals or other legal entities.
- s. *Pollutant* as defined in 40 CFR §122.2 means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, cellar dirt and industrial, municipal, and agricultural waste discharge into water. It does not mean sewage from vessels within the meaning of section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.
- t. *Pollution or Water Pollution* as defined by ORS 468B.005(3) means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.
- u. *Runoff Controls* means BMPs that are designed to control the peak volume and flow rate and to prevent scour due to concentrated flows.
- v. *Sediment* means solid unconsolidated rock and mineral fragments that come from the weathering of rocks and are transported by water, air, or ice and form layers on the Earth's surface. Sediments can also result from chemical precipitation or secretion by organisms.
- w. *Site* means the area where the construction activity is physically located or conducted.
- x. *Source Control BMPs* means physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.
- y. *Stormwater Conveyance* means a sewer, ditch, or swale that is designed to carry stormwater; a stormwater conveyance may also be referred to as a storm drain or storm sewer.

- z. *Stormwater as defined by 40 CFR §122.26(b)(13)* means stormwater runoff, snow melt runoff, and surface runoff and drainage.
- aa. *Surface Runoff* means that portion of stormwater that does not infiltrate into the ground or evaporates, but instead flows onto adjacent land or watercourses or is routed to stormwater conveyance systems.
- bb. *Surface Water* means all water naturally open to the atmosphere (e.g., rivers, lakes, reservoirs, ponds, streams, impoundments, oceans, estuaries, springs, etc.).
- cc. *Total Daily Maximum Load or TMDL* means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards. It is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. Percentages of the TMDL are allocated by the department to the various pollutant sources. The TMDL calculations must include a "margin of safety" to ensure that the waterbody can be protected in case there are unforeseen events or unknown sources of the pollutant. The calculation must also account for seasonable variation in water quality.
- dd. *Turbidity* means the optical condition of waters caused by suspended or dissolved particles or colloids that scatter and absorb light rays instead of transmitting light in straight lines through the water column. Turbidity may be expressed as nephelometric turbidity units (NTUs) measured with a calibrated turbidity meter.
- ee. *Underground Injection Control or UIC* means any system, structure, or activity that is created to place fluid below the ground or sub-surface (e.g., sumps, infiltration galleries, drywells, trench drains, drill holes, etc.)
- ff. *Water or Waters of the State as defined by ORS 468B.005(8)* means lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

SCHEDULE F NPDES GENERAL CONDITIONS

SECTION A. STANDARD CONDITIONS

1. Duty to Comply

The permit registrant must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Oregon Revised Statutes (ORS) 468B.025, and 40 Code of Federal Regulations (CFR) §122.41(a), and is grounds for enforcement action; for permit termination, revocation or reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Water Pollution and Permit Condition Violations

ORS 468.140 allows the department to impose civil penalties up to \$10,000 per day for violation of a term, condition, or requirement of a permit. Additionally 40 CFR §122.41 (A) provides that any person who violates any permit condition, term, or requirement may be subject to a federal civil penalty not to exceed \$25,000 per day for each violation.

Under ORS 468.943 and 40 CFR §122.41(a), unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to \$25,000 imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

Under ORS 468.946, a person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a Class B felony punishable by a fine not to exceed \$200,000 and up to 10 years in prison. Additionally, under 40 CFR §122.41(a) any person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a federal civil penalty not to exceed \$100,000, and up to 6 years in prison.

3. Duty to Mitigate

The permit registrant must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the department, the permit registrant must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

4. Duty to Reapply

If the permit registrant wishes to continue an activity regulated by this permit after the expiration date of this permit, the permit registrant must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit. The department may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

- a. Violation of any term, condition, or requirement of this permit, a rule, or a statute
- b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge
- d. The permit registrant is identified as a Designated Management Agency or allocated a wasteload under a Total Maximum Daily Load (TMDL)
- e. New information or regulations
- f. Modification of compliance schedules
- g. Requirements of permit re-opener conditions
- h. Correction of technical mistakes made in determining permit conditions
- i. Determination that the permitted activity endangers human health or the environment
- j. Other causes as specified in 40 CFR §§122.62, 122.64, and 124.5

The filing of a request by the permit registrant for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Toxic Pollutants

The permit registrant must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to persons or property or invasion of any other private rights, nor any infringement of federal, tribal, state, or local laws or regulations.

8. Permit References

Except for effluent standards or prohibitions established under Section 307(a) of the Clean Water Act and OAR 340-041-0033 for toxic pollutants, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

9. Permit Fees

The permit registrant must pay the fees required by OAR 340-045-0070 to 0075.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permit registrant must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permit registrant to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permit registrant only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Duty to Halt or Reduce Activity

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permit registrant must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permit registrant in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Bypass of Treatment Facilities

a. Definitions

- (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The term "bypass" does not apply if the diversion does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation or the diversion is due to nonuse of nonessential treatment units or processes at the treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities or treatment processes that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Prohibition of bypass.

(1) Bypass is prohibited unless:

- (a) Bypass was necessary to prevent loss of life, personal injury, or severe property damage;
- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of

reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The permit registrant submitted notices and requests as required under General Condition B.3.c.

- (2) The department may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when the department determines that it will meet the three conditions listed above in General Condition B.3.b.(1).

c. Notice and request for bypass.

- (1) Anticipated bypass. If the permit registrant knows in advance of the need for a bypass, a written notice must be submitted to the department at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permit registrant must submit notice of an unanticipated bypass as required in General Condition D.5.

4. Upset

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permit registrant. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B.4.c are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance is not final administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset. A permit registrant who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
- (1) An upset occurred and that the permit registrant can identify the causes(s) of the upset;
- (2) The permitted facility was at the time being properly operated;
- (3) The permit registrant submitted notice of the upset as required in General Condition D.5, hereof (24-hour notice); and
- (4) The permit registrant complied with any remedial measures required under General Condition A.3 hereof.
- d. Burden of proof. In any enforcement proceeding, the permit registrant seeking to establish the occurrence of an upset has the burden of proof.

5. Treatment of Single Operational Upset

For purposes of this permit, A Single Operational Upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

6. Overflows from Stormwater Conveyance Systems (privately owned)

a. Definitions

- (1) "Overflow" means the diversion and discharge of waste streams from any portion of the wastewater conveyance system through a designed overflow device or structure, other than discharges to the wastewater treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the conveyance system which causes it to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of an overflow.
- (3) "Uncontrolled overflow" means the diversion of waste streams other than through a designed overflow device or structure.

- b. Prohibition of overflows. Overflows are prohibited unless:
 - (1) Overflows were unavoidable to prevent an uncontrolled overflow, loss of life, personal injury, or severe property damage;
 - (2) There were no feasible alternatives to the overflows, such as the use of auxiliary conveyance systems, or maximization of conveyance system storage; and
 - (3) The overflows are the result of an upset as defined in General Condition B.4 and meeting all requirements of this condition.
 - c. Uncontrolled overflows are prohibited where wastewater is likely to escape or be carried into the waters of the State by any means.
 - d. Reporting required. Unless otherwise specified in writing by the department, all overflows and uncontrolled overflows must be reported orally to the department within 24 hours from the time the permit registrant becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D.5.
7. Public Notification of Effluent Violation or Overflow
If effluent limitations specified in this permit are exceeded or an overflow occurs, upon request by the department, the permit registrant must take such steps as are necessary to alert the public about the extent and nature of the discharge. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.
8. Removed Substances
Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling
Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and shall be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points may not be changed without notification to and the approval from the department.
2. Flow Measurements
Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.
3. Monitoring Procedures
Monitoring must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in this permit.
4. Penalties of Tampering
The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than \$10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.
5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a Discharge Monitoring Report form approved by the department. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

6. Additional Monitoring by the Permit registrant

If the permit registrant monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 part CFR part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (e.g., Total Chlorine Residual), only the average daily value must be recorded unless otherwise specified in this permit.

7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which shall be averaged as specified in this permit.

8. Retention of Records

The permit registrant must retain records of all monitoring information, including: all calibration, maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the department at any time.

9. Records Contents

Records of monitoring information must include:

- a. The date, exact place, time, and methods of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

10. Inspection and Entry

The permit registrant must allow the department or an authorized representative upon the presentation of credentials to:

- a. Enter upon the permit registrant's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes

The permit registrant must comply with OAR chapter 340, division 52, "Review of Plans and Specifications" and 40 CFR §122.41(I)(1). Except where exempted under OAR chapter 340, division 52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by the department. The permit registrant must give notice to the department as soon as possible of any planned physical alternations or additions to the permitted facility.

2. Anticipated Noncompliance

The permit registrant must give advance notice to the department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

3. Transfers

This permit may be transferred to a new permit registrant provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and the rules of the Commission. No permit may be transferred to a third party without prior written approval from the department. The department may require modification, revocation, and reissuance of the permit to change the name of the permit registrant and incorporate such other requirements as may be necessary. The permit registrant must notify the department when a transfer of property interest takes place.

4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

5. Twenty-Four Hour Reporting

The permit registrant must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours, unless otherwise specified in this permit, from the time the permit registrant becomes aware of the circumstances. During normal business hours, the department's Regional office must be called. Outside of normal business hours, the department must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

A written submission must also be provided within 5 days of the time the permit registrant becomes aware of the circumstances. Pursuant to ORS 468.959 (3) (a), if the permit registrant is establishing an affirmative defense of upset or bypass to any offense under ORS 468.922 to 468.946, delivered written notice must be made to the department or other agency with regulatory jurisdiction within 4 (four) calendar days of the time the permit registrant becomes aware of the circumstances. The written submission must contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected;
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
- e. Public notification steps taken, pursuant to General Condition B.6

The following must be included as information that must be reported within 24 hours under this paragraph:

- a. Any unanticipated bypass that exceeds any effluent limitation in this permit.
- b. Any upset that exceeds any effluent limitation in this permit.
- c. Violation of maximum daily discharge limitation for any of the pollutants listed by the department in this permit.
- d. Any noncompliance that may endanger human health or the environment.

The department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

6. Other Noncompliance

The permit registrant must report all instances of noncompliance not reported under General Condition D.4 or D.5, at the time monitoring reports are submitted. The reports must contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

7. Duty to Provide Information

The permit registrant must furnish to the department within a reasonable time any information that the department may request to determine compliance with this permit. The permit registrant must also furnish to the department, upon request, copies of records required to be kept by this permit.

Other Information: When the permit registrant becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to the department, it must promptly submit such facts or information.

8. Signatory Requirements

All applications, reports or information submitted to the department must be signed and certified in accordance with 40 CFR §122.22.

9. Falsification of Information

Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed \$100,000 per violation and up to 5 years in prison. Additionally, according to 40 CFR §122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a federal civil penalty not to exceed \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

10. Changes to Discharges of Toxic Pollutant

The permit registrant must notify the department as soon as it knows or have reason to believe of the following:

- a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 µg/l);
 - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (4) The level established by the department in accordance with 40 CFR §122.44(f).
- b. That any activity has occurred or will occur that would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
 - (4) The level established by the department in accordance with 40 CFR §122.44(f).

SECTION E. DEFINITIONS

1. Technology based permit effluent limitations means technology-based treatment requirements as defined in 40 CFR §125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
2. mg/l means milligrams per liter.
3. Grab sample means an individual discrete sample collected over a period of time not to exceed 15 minutes.
4. Month means calendar month.
5. Week means a calendar week of Sunday through Saturday.

APPENDIX B
PHOTOGRAPHS



Photo 1—Monitoring well decommissioning.



Photo 2—Monitoring well decommissioning.



Photo 3—Monitoring well decommissioning debris.

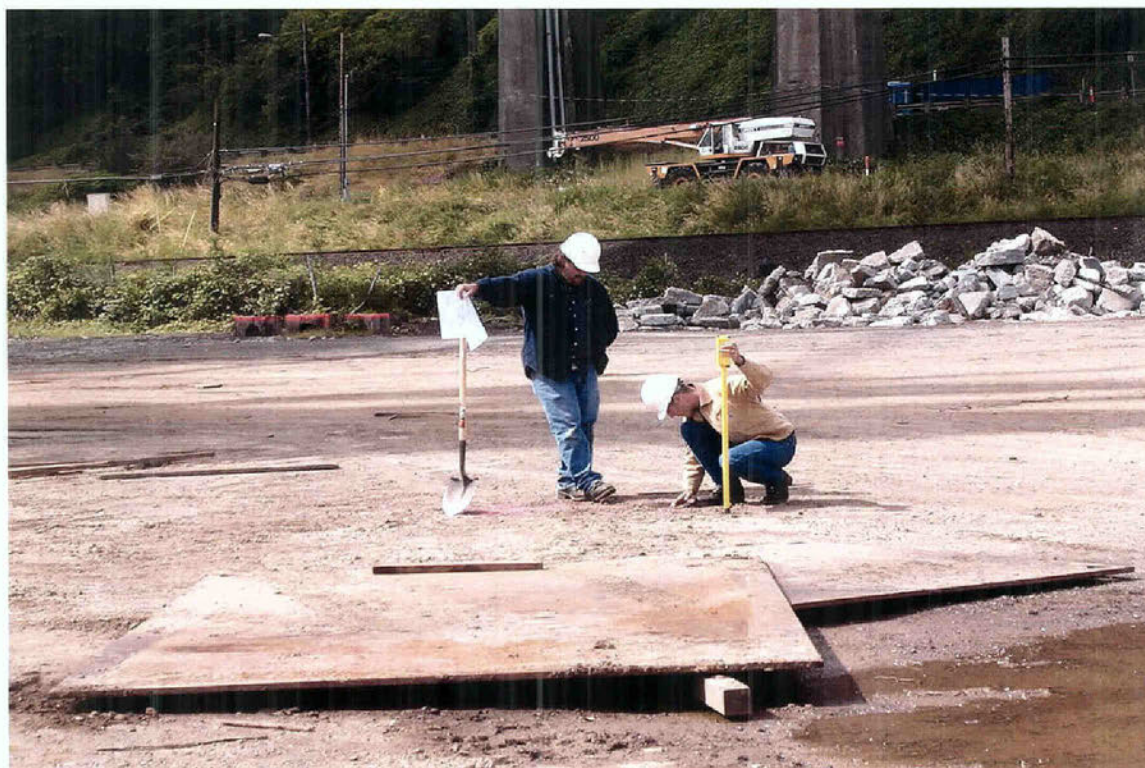


Photo 4—Survey.



Photo 5—Drilling SS-12.



Photo 6—Geoprobe™ investigation.



Photo 7—Delineation of Soil Management Area SS-15.



Photo 8—Delineation of Soil Management Area SS-12.



Photo 9—Erosion control.



Photo 10—Clearing for Excavation SS-7.



Photo 11—Excavation of SS-12.



Photo 12—Backfilling SS-12.



Photo 13—Backfilling SS-7 and SS-12.



Photo 14—Excavations SS-7 and SS-12 backfilling complete with straw barrier.



Photo 15—Clearing of Excavation SS-15.



Photo 16—Excavating SS-15.



Photo 17—Excavating SS-16.



Photo 18—Excavation SS-16.



Photo 19—Excavation stockpile area.



Photo 20—Concrete stockpile.



Photo 21—Crushed-concrete berm.



Photo 22—Filling and grading.



Photo 23—Filling and grading.



Photo 24—Excavated soil placement under future building foundation.



Photo 25—Excavated soil placement under future building foundation.



Photo 26—Construction of stormwater management system.



Photo 27—Stormwater discharge pipe before construction.

ACC Source Control





1-18-06c.jpg



10-14-05c.jpg



11-16-05c.jpg



12-15-05c.jpg



2-16-06hpc.jpg



3-13-06c.jpg



5-15-06c.jpg



6-21-05 c.jpg



7-13-05 c.jpg



8-13-05 c.jpg



9-21-05 c.jpg

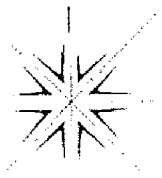


Before.jpg



APPENDIX C
ANALYTICAL REPORTS

GEOTECHNICAL EVALUATION



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

January 04, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX: (971) 544-2140

RE: AACP- Property / 0100.01.01

Dear Anna St. John:

Order No.: 0412146

Specialty Analytical received 12 samples on 12/23/2004 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Ingleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

AAC000393

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-01
Client Sample ID: HC-2/0-20

Collection Date: 12/20/2004 12:15:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: nne
Acenaphthene	ND	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Anthracene	ND	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Benz(a)anthracene	11.3	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Benzo(a)pyrene	18.0	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Benzo(b)fluoranthene	23.3	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Benzo(g,h,i)perylene	17.3	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Benzo(k)fluoranthene	8.67	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Chrysene	16.0	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Fluoranthene	38.7	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Fluorene	ND	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Indeno(1,2,3-cd)pyrene	13.3	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Naphthalene	15.3	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Phenanthrene	24.0	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Pyrene	34.7	6.67		µg/Kg	1	12/28/2004 6:55:00 PM
Surr: 2-Fluorobiphenyl	72.7	42.6-128		%REC	1	12/28/2004 6:55:00 PM
Surr: Nitrobenzene-d5	75.1	21.7-155		%REC	1	12/28/2004 6:55:00 PM
Surr: p-Terphenyl-d14	99.3	44.9-155		%REC	1	12/28/2004 6:55:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-02

Collection Date: 12/20/2004 3:55:00 PM

Client Sample ID: HC-5/0-20

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: nne		
Acenaphthene	41.3	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Acenaphthylene	19.3	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Anthracene	50.7	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Benz(a)anthracene	133	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Benzo(a)pyrene	183	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Benzo(b)fluoranthene	190	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Benzo(g,h,i)perylene	159	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Benzo(k)fluoranthene	62.0	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Chrysene	137	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Dibenz(a,h)anthracene	26.7	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Fluoranthene	390	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Fluorene	42.7	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Indeno(1,2,3-cd)pyrene	114	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Naphthalene	120	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Phenanthrene	181	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Pyrene	449	6.67		µg/Kg	1	12/29/2004 5:08:00 PM
Surr: 2-Fluorobiphenyl	68.1	42.6-128		%REC	1	12/29/2004 5:08:00 PM
Surr: Nitrobenzene-d5	66.9	21.7-155		%REC	1	12/29/2004 5:08:00 PM
Surr: p-Terphenyl-d14	90.2	44.9-155		%REC	1	12/29/2004 5:08:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-03

Collection Date: 12/21/2004 9:43:00 AM

Client Sample ID: HC-1/0-15

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: nne		
Acenaphthene	15.3	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Acenaphthylene	10.0	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Anthracene	11.3	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Benz(a)anthracene	51.3	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Benzo(a)pyrene	90.7	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Benzo(b)fluoranthene	85.3	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Benzo(g,h,i)perylene	87.3	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Benzo(k)fluoranthene	30.0	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Chrysene	58.0	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Dibenz(a,h)anthracene	15.3	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Fluoranthene	112	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Fluorene	12.0	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Indeno(1,2,3-cd)pyrene	62.7	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Naphthalene	31.3	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Phenanthrene	66.7	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Pyrene	128	6.67		µg/Kg	1	12/28/2004 7:58:00 PM
Surr: 2-Fluorobiphenyl	63.5	42.6-128		%REC	1	12/28/2004 7:58:00 PM
Surr: Nitrobenzene-d5	58.7	21.7-155		%REC	1	12/28/2004 7:58:00 PM
Surr: p-Terphenyl-d14	101	44.9-155		%REC	1	12/28/2004 7:58:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-04

Collection Date: 12/21/2004 12:29:00 PM

Client Sample ID: HC-3/0-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
	E6010					Analyst: das
Copper	65.7	0.725		mg/Kg	1	12/27/2004 8:55:41 PM
Lead	37.1	1.45		mg/Kg	1	12/27/2004 8:55:41 PM
PAH'S BY GC/MS-OARSIM						
	8270SIM					Analyst: nne
Acenaphthene	78.0	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Acenaphthylene	38.0	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Anthracene	82.7	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Benz(a)anthracene	107	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Benzo(a)pyrene	135	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Benzo(b)fluoranthene	238	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Benzo(g,h,i)perylene	145	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Benzo(k)fluoranthene	63.3	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Chrysene	120	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Dibenz(a,h)anthracene	32.0	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Fluoranthene	205	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Fluorene	74.0	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Indeno(1,2,3-cd)pyrene	130	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Naphthalene	33.3	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Phenanthrene	120	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Pyrene	191	6.67		µg/Kg	1	12/28/2004 8:29:00 PM
Surr: 2-Fluorobiphenyl	70.6	42.6-128		%REC	1	12/28/2004 8:29:00 PM
Surr: Nitrobenzene-d5	73.9	21.7-155		%REC	1	12/28/2004 8:29:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	12/28/2004 8:29:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-05

Collection Date: 12/21/2004 12:37:00 PM

Client Sample ID: HC-3/2.5

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: tlf
Diesel	282	16.9		mg/Kg-dry	1	12/28/2004
Lube Oil	84.0	56.4		mg/Kg-dry	1	12/28/2004
Surr: o-Terphenyl	119	50-150		%REC	1	12/28/2004
NWTPH-GX		NWTPH-GX				Analyst: tlf
Gasoline	233	28.2		mg/Kg-dry	10	12/27/2004
Surr: 4-Bromofluorobenzene	11.2	50-150	S,D	%REC	10	12/27/2004
TOTAL METALS BY ICP		E6010				Analyst: das
Copper	33.4	0.794		mg/Kg	1	12/27/2004 9:01:10 PM
Lead	32.3	1.59		mg/Kg	1	12/27/2004 9:01:10 PM
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: nne
Acenaphthene	12.0	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Acenaphthylene	11.3	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Anthracene	10.0	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Benz(a)anthracene	ND	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Benzo(a)pyrene	ND	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Benzo(b)fluoranthene	7.33	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Benzo(g,h,i)perylene	14.7	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Benzo(k)fluoranthene	ND	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Chrysene	ND	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Fluoranthene	10.0	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Fluorene	54.0	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Indeno(1,2,3-cd)pyrene	8.67	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Naphthalene	37.3	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Phenanthrene	116	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Pyrene	18.0	6.67		µg/Kg	1	12/28/2004 9:00:00 PM
Surr: 2-Fluorobiphenyl	52.0	42.6-128		%REC	1	12/28/2004 9:00:00 PM
Surr: Nitrobenzene-d5	68.9	21.7-155		%REC	1	12/28/2004 9:00:00 PM
Surr: p-Terphenyl-d14	100	44.9-155		%REC	1	12/28/2004 9:00:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-06
Client Sample ID: HC-3/5-17.5

Collection Date: 12/21/2004 1:20:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
	E6010					Analyst: das
Copper	25.2	0.862		mg/Kg	1	12/27/2004 9:06:26 PM
Lead	18.0	1.72		mg/Kg	1	12/27/2004 9:06:26 PM
PAH'S BY GC/MS-OARSIM						
	8270SIM					Analyst: nne
Acenaphthene	12.0	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Acenaphthylene	8.00	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Anthracene	26.0	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Benz(a)anthracene	35.3	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Benzo(a)pyrene	44.0	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Benzo(b)fluoranthene	61.3	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Benzo(g,h,i)perylene	44.7	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Benzo(k)fluoranthene	18.0	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Chrysene	36.7	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Dibenz(a,h)anthracene	12.0	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Fluoranthene	89.3	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Fluorene	22.0	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Indeno(1,2,3-cd)pyrene	34.7	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Naphthalene	35.3	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Phenanthrene	95.3	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Pyrene	92.7	6.67		µg/Kg	1	12/28/2004 9:31:00 PM
Surr: 2-Fluorobiphenyl	54.3	42.6-128		%REC	1	12/28/2004 9:31:00 PM
Surr: Nitrobenzene-d5	62.2	21.7-155		%REC	1	12/28/2004 9:31:00 PM
Surr: p-Terphenyl-d14	10.1	44.9-155		%REC	1	12/28/2004 9:31:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-07

Collection Date: 12/21/2004 3:28:00 PM

Client Sample ID: HC-4/0-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
	E6010					Analyst: das
Copper	16.7	0.746		mg/Kg	1	12/27/2004 9:11:43 PM
Lead	14.8	1.49		mg/Kg	1	12/27/2004 9:11:43 PM
PAH'S BY GC/MS-OARSIM						
	8270SIM					Analyst: nne
Acenaphthene	28.0	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Acenaphthylene	12.7	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Anthracene	14.7	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Benz(a)anthracene	94.0	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Benzo(a)pyrene	161	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Benzo(b)fluoranthene	181	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Benzo(g,h,i)perylene	147	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Benzo(k)fluoranthene	54.7	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Chrysene	107	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Dibenz(a,h)anthracene	30.7	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Fluoranthene	208	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Fluorene	22.7	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Indeno(1,2,3-cd)pyrene	109	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Naphthalene	19.3	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Phenanthrene	90.7	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Pyrene	211	6.67		µg/Kg	1	12/28/2004 10:02:00 PM
Surr: 2-Fluorobiphenyl	74.4	42.6-128		%REC	1	12/28/2004 10:02:00 PM
Surr: Nitrobenzene-d5	74.4	21.7-155		%REC	1	12/28/2004 10:02:00 PM
Surr: p-Terphenyl-d14	100	44.9-155		%REC	1	12/28/2004 10:02:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-08
Client Sample ID: HC-4/2.5-25

Collection Date: 12/21/2004 4:30:00 PM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
	E6010					Analyst: das
Copper	21.7	0.781		mg/Kg	1	12/27/2004 9:17:14 PM
Lead	26.6	1.56		mg/Kg	1	12/27/2004 9:17:14 PM
PAH'S BY GC/MS-OARSIM						
	8270SIM					Analyst: nne
Acenaphthene	153	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Acenaphthylene	43.3	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Anthracene	102	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Benz(a)anthracene	236	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Benzo(a)pyrene	339	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Benzo(b)fluoranthene	348	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Benzo(g,h,i)perylene	284	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Benzo(k)fluoranthene	103	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Chrysene	259	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Dibenz(a,h)anthracene	34.7	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Fluoranthene	787	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Fluorene	157	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Indeno(1,2,3-cd)pyrene	189	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Naphthalene	75.3	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Phenanthrene	397	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Pyrene	921	6.67		µg/Kg	1	12/28/2004 10:34:00 PM
Surr: 2-Fluorobiphenyl	72.7	42.6-128		%REC	1	12/28/2004 10:34:00 PM
Surr: Nitrobenzene-d5	70.5	21.7-155		%REC	1	12/28/2004 10:34:00 PM
Surr: p-Terphenyl-d14	107	44.9-155		%REC	1	12/28/2004 10:34:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-09
Client Sample ID: HC-6/0-17.5

Collection Date: 12/22/2004 11:10:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: nne		
Acenaphthene	ND	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Anthracene	ND	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Benz(a)anthracene	14.0	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Benzo(a)pyrene	20.7	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Benzo(b)fluoranthene	22.0	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Benzo(g,h,i)perylene	19.3	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Benzo(k)fluoranthene	7.33	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Chrysene	14.7	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Fluoranthene	28.0	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Fluorene	ND	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Indeno(1,2,3-cd)pyrene	14.0	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Naphthalene	ND	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Phenanthrene	14.0	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Pyrene	30.0	6.67		µg/Kg	1	12/28/2004 11:05:00 PM
Surr: 2-Fluorobiphenyl	59.6	42.6-128		%REC	1	12/28/2004 11:05:00 PM
Surr: Nitrobenzene-d5	49.7	21.7-155		%REC	1	12/28/2004 11:05:00 PM
Surr: p-Terphenyl-d14	93.3	44.9-155		%REC	1	12/28/2004 11:05:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-10

Collection Date: 12/22/2004 1:57:00 PM

Client Sample ID: HC-8/0-10

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: nne
Acenaphthene	8.00	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Anthracene	8.67	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Benz(a)anthracene	22.0	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Benzo(a)pyrene	28.0	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Benzo(b)fluoranthene	31.3	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Benzo(g,h,i)perylene	32.7	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Benzo(k)fluoranthene	10.7	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Chrysene	23.3	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Dibenz(a,h)anthracene	8.00	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Fluoranthene	46.7	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Fluorene	7.33	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Indeno(1,2,3-cd)pyrene	20.0	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Naphthalene	ND	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Phenanthrene	21.3	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Pyrene	49.3	6.67		µg/Kg	1	12/29/2004 5:39:00 PM
Surr: 2-Fluorobiphenyl	69.6	42.6-128		%REC	1	12/29/2004 5:39:00 PM
Surr: Nitrobenzene-d5	62.8	21.7-155		%REC	1	12/29/2004 5:39:00 PM
Surr: p-Terphenyl-d14	97.8	44.9-155		%REC	1	12/29/2004 5:39:00 PM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-11

Collection Date: 12/22/2004 2:40:00 PM

Client Sample ID: HC-7/0-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: das
Copper	26.7	0.769		mg/Kg	1	12/27/2004 9:22:31 PM
Lead	23.9	1.54		mg/Kg	1	12/27/2004 9:22:31 PM
PAH'S BY GC/MS-OARSIM						
		8270SIM				Analyst: nne
Acenaphthene	ND	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Acenaphthylene	ND	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Anthracene	ND	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Benz(a)anthracene	17.3	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Benzo(a)pyrene	24.7	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Benzo(b)fluoranthene	31.3	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Benzo(g,h,i)perylene	18.0	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Benzo(k)fluoranthene	10.7	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Chrysene	16.7	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Fluoranthene	29.3	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Fluorene	ND	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Indeno(1,2,3-cd)pyrene	14.7	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Naphthalene	ND	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Phenanthrene	13.3	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Pyrene	27.3	6.67		µg/Kg	1	12/29/2004 12:07:00 AM
Surr: 2-Fluorobiphenyl	40.2	42.6-128	S	%REC	1	12/29/2004 12:07:00 AM
Surr: Nitrobenzene-d5	39.2	21.7-155		%REC	1	12/29/2004 12:07:00 AM
Surr: p-Terphenyl-d14	85.5	44.9-155		%REC	1	12/29/2004 12:07:00 AM

Specialty Analytical

Date: 04-Jan-05

CLIENT: Maul, Foster & Alongi
Project: AACP- Property / 0100.01.01

Lab Order: 0412146

Lab ID: 0412146-12
Client Sample ID: HC-7/2.5-20

Collection Date: 12/22/2004 3:35:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
	E6010					Analyst: das
Copper	18.4	0.794		mg/Kg	1	12/27/2004 9:43:51 PM
Lead	24.0	1.59		mg/Kg	1	12/27/2004 9:43:51 PM
PAH'S BY GC/MS-OARSIM						
	8270SIM					Analyst: nne
Acenaphthene	8.67	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Anthracene	ND	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Benz(a)anthracene	30.0	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Benzo(a)pyrene	37.3	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Benzo(b)fluoranthene	41.3	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Benzo(g,h,i)perylene	31.3	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Benzo(k)fluoranthene	15.3	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Chrysene	31.3	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Dibenz(a,h)anthracene	8.00	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Fluoranthene	72.0	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Fluorene	8.00	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Indeno(1,2,3-cd)pyrene	23.3	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Naphthalene	8.67	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Phenanthrene	38.0	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Pyrene	68.7	6.67		µg/Kg	1	12/29/2004 6:10:00 PM
Surr: 2-Fluorobiphenyl	59.2	42.6-128		%REC	1	12/29/2004 6:10:00 PM
Surr: Nitrobenzene-d5	60.5	21.7-155		%REC	1	12/29/2004 6:10:00 PM
Surr: p-Terphenyl-d14	93.7	44.9-155		%REC	1	12/29/2004 6:10:00 PM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP-Property/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E		
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301822		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	ND	1.00												
Lead	ND	2.00												

Sample ID	LCS	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E		
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301823		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	48.65	1.00	50	0	97.3	91.3	111	0	0					
Lead	95.35	2.00	100	0	95.4	84.9	109	0	0					

Sample ID	0412131-01AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E	
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301826	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	44.25	0.758	37.88	9.167	92.6	75.1	126	0	0					
Lead	74.33	1.52	75.76	4.864	91.7	92.1	104	0	0					S,RP

Sample ID	0412131-01AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E	
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301827	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	48.52	0.794	39.68	9.167	99.2	75.1	126	44.25	9.21	20				
Lead	80.87	1.59	79.37	4.864	95.8	92.1	104	74.33	8.44	20				

Sample ID	0412131-01ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E	
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301825	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	8.307	0.877	0	0	0	0	0	9.167	9.84	20				
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Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP- Property/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0412131-01ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E		
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301825		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	ND	1.75	0	0	0	0	0	0	4.864	0	20
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E		
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301828		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.47	1.00	50	0	98.9	90	110	0	0
Lead	101.2	2.00	100	0	101	90	110	0	0

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E		
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301839		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	50.54	1.00	50	0	101	90	110	0	0
Lead	101.5	2.00	100	0	102	90	110	0	0

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E		
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301849		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.81	1.00	50	0	99.6	90	110	0	0
Lead	103.5	2.00	100	0	104	90	110	0	0

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	TJAIRIS_041227E		
Client ID:	ZZZZZ	Batch ID:	12530	TestNo:	E6010			Analysis Date:	12/27/2004	SeqNo:	301851		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	50.14	1.00	50	0	100	90	110	0	0
Lead	103.6	2.00	100	0	104	90	110	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0412146
Project: AACP- Property/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/27/2004	Run ID: TJAIRIS_041227E					
Client ID: ZZZZZ	Batch ID: 12530	TestNo: E6010	Analysis Date: 12/27/2004			SeqNo: 301821					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	49.07	1.00	50	0	98.1	90	110	0	0		
Lead	97.88	2.00	100	0	97.9	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

Page 3 of 9

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP- Property /0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	GC-M_041228A	
Client ID:	ZZZZZ	Batch ID:	12535	TestNo:	NWTPH-Dx			Analysis Date:	12/28/2004	SeqNo:	302038	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND	15.0									
Lube Oil		ND	50.0									
Surr:o-Terphenyl		28.43	1.00	33.33	0	85.3	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	GC-M_041228A	
Client ID:	ZZZZZ	Batch ID:	12535	TestNo:	NWTPH-Dx			Analysis Date:	12/28/2004	SeqNo:	302039	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		156.5	15.0	167.6	0	93.4	76.3	122	0	0		
Lube Oil		172.8	50.0	167.6	0	103	69.9	127	0	0		

Sample ID	0412146-05BDUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	12/27/2004	Run ID:	GC-M_041228A	
Client ID:	HC-3/2.5	Batch ID:	12535	TestNo:	NWTPH-Dx			Analysis Date:	12/28/2004	SeqNo:	302053	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		289	16.9	0	0	0	0	0	282.1	2.43	20	
Lube Oil		86.57	56.4	0	0	0	0	0	84	3.00	20	

Sample ID	0412151-03ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	12/27/2004	Run ID:	GC-M_041228A	
Client ID:	ZZZZZ	Batch ID:	12535	TestNo:	NWTPH-Dx			Analysis Date:	12/28/2004	SeqNo:	302054	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		111	19.4	0	0	0	0	0	99.93	10.5	20	
Lube Oil		247.4	64.5	0	0	0	0	0	238.6	3.62	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041228A	
Client ID:	ZZZZZ	Batch ID:	12535	TestNo:	NWTPH-Dx			Analysis Date:	12/28/2004	SeqNo:	302040	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		663.3	15.0	666.6	0	99.5	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP-Property/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041228A		
Client ID:	ZZZZZ	Batch ID:	12535	TestNo:	NWTPH-Dx			Analysis Date:	12/28/2004	SeqNo:	302040		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lube Oil	346.5	50.0	333.3	0	104	85	115	0	0					
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Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041228A		
Client ID:	ZZZZZ	Batch ID:	12535	TestNo:	NWTPH-Dx			Analysis Date:	12/28/2004	SeqNo:	302055		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	670.3	15.0	666.6	0	101	85	115	0	0					
Lube Oil	342.6	50.0	333.3	0	103	85	115	0	0					

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CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP- Property / 0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	GC-H_041227A		
Client ID:	ZZZZZ	Batch ID:	12528	TestNo:	NWTPH-Gx			Analysis Date:	12/27/2004	SeqNo:	301917		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	2.50												
Surr:4-Bromofluorobenzene	123.6	1.00	100	0	124	50	150	0	0					

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	12/27/2004	Run ID:	GC-H_041227A		
Client ID:	ZZZZZ	Batch ID:	12528	TestNo:	NWTPH-Gx			Analysis Date:	12/27/2004	SeqNo:	301918		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	29.35	2.50	30	0	97.8	53.5	121	0	0					
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Sample ID	0412129-01ADUP	SampType:	DUP	TestCode:	NWTPHGX_S	Units:	mg/Kg-dry	Prep Date:	12/27/2004	Run ID:	GC-H_041227A		
Client ID:	ZZZZZ	Batch ID:	12528	TestNo:	NWTPH-Gx			Analysis Date:	12/27/2004	SeqNo:	301923		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	2.75	0	0	0	0	0	0	0	0	20			
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Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041227A		
Client ID:	ZZZZZ	Batch ID:	12528	TestNo:	NWTPH-Gx			Analysis Date:	12/27/2004	SeqNo:	301919		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	2162	2.50	2000	0	108	80	120	0	0					
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Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041227A			
Client ID:	ZZZZZ	Batch ID:	12528	TestNo:	NWTPH-Gx			Analysis Date:	12/27/2004	SeqNo:	301924			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	2711	2.50	2500	0	108	80	120	0	0					
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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP-Property/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB	SampType	MBLK	TestCode	PAHLL_S	Units	µg/Kg	Prep Date	12/27/2004	RunID	5973P_041228A
Client ID	ZZZZZ	Batch ID	12534	TestNo	8270SIM			Analysis Date	12/28/2004	SeqNo	302430
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	0.6667	6.67									J
Benz(a)anthracene	0.6667	6.67									J
Benzo(a)pyrene	ND	6.67									
Benzo(b)fluoranthene	ND	6.67									
Benzo(g,h,i)perylene	ND	6.67									
Benzo(k)fluoranthene	ND	6.67									
Chrysene	ND	6.67									
Dibenz(a,h)anthracene	ND	6.67									
Fluoranthene	ND	6.67									
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	ND	6.67									
Naphthalene	ND	6.67									
Phenanthrene	ND	6.67									
Pyrene	ND	6.67									
Surr:2-Fluorobiphenyl	4342	0	6667	0	65.1	42.6	128	0	0		
Surr:Nitrobenzene-d5	4331	0	6667	0	65	21.7	155	0	0		
Surr:p-Terphenyl-d14	7231	0	6667	0	108	44.9	155	0	0		

Sample ID	LCS	SampType	LCS	TestCode	PAHLL_S	Units	µg/Kg	Prep Date	12/27/2004	RunID	5973P_041228A
Client ID	ZZZZZ	Batch ID	12534	TestNo	8270SIM			Analysis Date	12/28/2004	SeqNo	302431
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	118.7	6.67	166.7	0	71.2	39.6	95.8	0	0		
Benzo(g,h,i)perylene	163.3	6.67	166.7	0	98	49.7	115	0	0		
Chrysene	163.3	6.67	166.7	0	98	57.1	112	0	0		
Naphthalene	109.3	6.67	166.7	0	65.6	29.1	103	0	0		
Phenanthrene	141.3	6.67	166.7	0	84.8	48.4	105	0	0		
Pyrene	162	6.67	166.7	0	97.2	47.2	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP-Property/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0412146-02AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	12/27/2004	Run ID:	5973P_041228A
Client ID:	HC-5/0-20	Batch ID:	12534	TestNo:	8270SIM			Analysis Date:	12/29/2004	SeqNo:	302442
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	141.3	6.67	166.7	41.33	60	33.7	107	0	0		
Benzo(g,h,i)perylene	298	6.67	166.7	159.3	83.2	15	128	0	0		
Chrysene	279.3	6.67	166.7	136.7	85.6	37.5	125	0	0		
Naphthalene	198.7	6.67	166.7	120	47.2	27.7	108	0	0		
Phenanthrene	296.7	6.67	166.7	180.7	69.6	20.2	139	0	0		
Pyrene	582	6.67	166.7	448.7	80	26.8	134	0	0		

Sample ID	0412146-02AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	12/27/2004	Run ID:	5973P_041228A
Client ID:	HC-5/0-20	Batch ID:	12534	TestNo:	8270SIM			Analysis Date:	12/29/2004	SeqNo:	302443
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	139.3	6.67	166.7	41.33	58.8	33.7	107	141.3	1.43	20	
Benzo(g,h,i)perylene	299.3	6.67	166.7	159.3	84	15	128	298	0.446	20	
Chrysene	286	6.67	166.7	136.7	89.6	37.5	125	279.3	2.36	20	
Naphthalene	181.3	6.67	166.7	120	36.8	27.7	108	198.7	9.12	20	
Phenanthrene	294.7	6.67	166.7	180.7	68.4	20.2	139	296.7	0.676	20	
Pyrene	585.3	6.67	166.7	448.7	82	26.8	134	582	0.571	20	

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_041228A
Client ID:	ZZZZZ	Batch ID:	12534	TestNo:	8270SIM			Analysis Date:	12/28/2004	SeqNo:	302429
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	2.01	6.67	2	0	101	70	130	0	0		
Acenaphthylene	2.01	6.67	2	0	101	70	130	0	0		
Anthracene	1.98	6.67	2	0	99	70	130	0	0		
Benz(a)anthracene	1.95	6.67	2	0	97.5	70	130	0	0		
Benzo(a)pyrene	1.96	6.67	2	0	98	70	130	0	0		
Benzo(b)fluoranthene	1.91	6.67	2	0	95.5	70	130	0	0		
Benzo(g,h,i)perylene	2	6.67	2	0	100	70	130	0	0		
Benzo(k)fluoranthene	2.01	6.67	2	0	101	70	130	0	0		
Chrysene	2.01	6.67	2	0	101	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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CLIENT: Maul, Foster & Alongi
 WorkOrder: 0412146
 Project: AACP-Property/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_041228A
Client ID:	ZZZZZ	Batch ID:	12534	TestNo:	8270SIM			Analysis Date:	12/28/2004	SeqNo:	302429
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	2.09	6.67	2	0	104	70	130	0	0		
Fluoranthene	1.97	6.67	2	0	98.5	70	130	0	0		
Fluorene	2	6.67	2	0	100	70	130	0	0		
Indeno(1,2,3-cd)pyrene	2.06	6.67	2	0	103	70	130	0	0		
Naphthalene	1.96	6.67	2	0	98	70	130	0	0		
Phenanthrene	1.97	6.67	2	0	98.5	70	130	0	0		
Pyrene	2.06	6.67	2	0	104	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_041228A
Client ID:	ZZZZZ	Batch ID:	12534	TestNo:	8270SIM			Analysis Date:	12/29/2004	SeqNo:	302441
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	1.91	6.67	2	0	95.5	70	130	0	0		
Acenaphthylene	1.92	6.67	2	0	96	70	130	0	0		
Anthracene	1.86	6.67	2	0	93	70	130	0	0		
Benz(a)anthracene	1.88	6.67	2	0	94	70	130	0	0		
Benzo(a)pyrene	1.8	6.67	2	0	90	70	130	0	0		
Benzo(b)fluoranthene	1.76	6.67	2	0	88	70	130	0	0		
Benzo(g,h,i)perylene	1.73	6.67	2	0	86.5	70	130	0	0		
Benzo(k)fluoranthene	1.82	6.67	2	0	91	70	130	0	0		
Chrysene	1.91	6.67	2	0	95.5	70	130	0	0		
Dibenz(a,h)anthracene	1.79	6.67	2	0	89.5	70	130	0	0		
Fluoranthene	2.12	6.67	2	0	106	70	130	0	0		
Fluorene	1.94	6.67	2	0	97	70	130	0	0		
Indeno(1,2,3-cd)pyrene	1.74	6.67	2	0	87	70	130	0	0		
Naphthalene	1.84	6.67	2	0	92	70	130	0	0		
Phenanthrene	1.87	6.67	2	0	93.5	70	130	0	0		
Pyrene	1.91	6.67	2	0	95.5	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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 R - RPD outside accepted recovery limits

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Page 9 of 9

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.

MFA PROJECT MGR

Anna St. John
PR (503) 544.2139MFA
3121 SW MOODY AVE, ST. 200
PDX, OR

0412146

Sample Custody Record

DATE 12-22-04

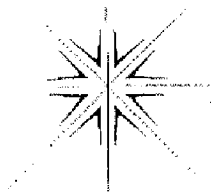
PAGE 1 OF 1

HARTCROWSER

Hart-Crowser, Inc.
Five Centerville Drive, Suite 240
Lake Oswego, Oregon 97035

JOB NUMBER <u>15576-00-5</u>		LAB NUMBER		TESTING						NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSING INSTRUCTIONS		
PROJECT MANAGER <u>DAVID RANZEN (Hart-Crowser)</u>		PROJECT NAME <u>AACP- PROPERTY (0104-PL-01)</u>		PMTS (GPM) Total	MCHG	GPM PL (GPM)	TPH	MUTPH-DX	TPH			MUTPH-GK	
SAMPLED BY: <u>Dawn Hamilton / TEM SKOTZKE</u>		LAB NO.	SAMPLE							TIME	STATION		MATRIX
	HC-2/0-20	12-20-04/1215			SOIL		X					2	
	HC-5/0-20	12-20-04/1555					X						
	HC-1/0-1.5	12-24-04/943					X						
	HC-3/0-1	12-21-04/1229					X						
	HC-3/2.5	12-21-04/1237					X	X	X				80% NOT FULL
	HC-3/5-17.5	12-21-04/1320					X	X					
	HC-4/0-1	12-21-04/1523					X						
	HC-4/2.5-7.5	12-21-04/1620					X						
	HC-6/0-12.5	12-22-04/1110					X						
	HC-8/0-10	12-22-04/1357					X						
	HC-7/0-1	12-22-04/1406					X	X					
	HC-7/2.5-20	12-22-04/1555					X	X					
RELINQUISHED BY <u>[Signature]</u>		DATE <u>12-22-04</u>	RECEIVED BY <u>[Signature]</u>		DATE <u>12-23-04</u>	TOTAL NUMBER OF CONTAINERS <u>24</u>		METHOD OF SHIPMENT <u>HAND DELIVER TO (HE)</u>					
SIGNATURE <u>[Signature]</u>		TIME <u>1632</u>	SIGNATURE <u>[Signature]</u>		TIME <u>1055</u>	SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS <u>*DATA TO MFA*</u>							
PRINTED NAME <u>DAVID RANZEN</u>		COMPANY <u>HARTCROWSER</u>	PRINTED NAME <u>Paul Kosko - A. Long</u>		COMPANY <u></u>								
RELINQUISHED BY <u>[Signature]</u>		DATE <u>12-23-04</u>	RECEIVED BY <u>[Signature]</u>		DATE <u>12-23-04</u>	DISTRIBUTION:							
SIGNATURE <u>[Signature]</u>		TIME <u>1555</u>	SIGNATURE <u>[Signature]</u>		TIME <u>1055</u>	1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY							
PRINTED NAME <u>SCOTT MARLOW</u>		COMPANY <u>MFA</u>	PRINTED NAME <u>NICKI TILTON</u>		COMPANY <u></u>	2. RETURN PINK COPY TO PROJECT MANAGER							
						3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT							
						4. LABORATORY TO RETURN WHITE COPY TO HARTCROWSER MFA							

SOURCE CONTROL MEASURE—SOIL CHARACTERIZATION



Specialty Analytical

10761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

April 21, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0504037

Specialty Analytical received 87 samples on 4/11/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

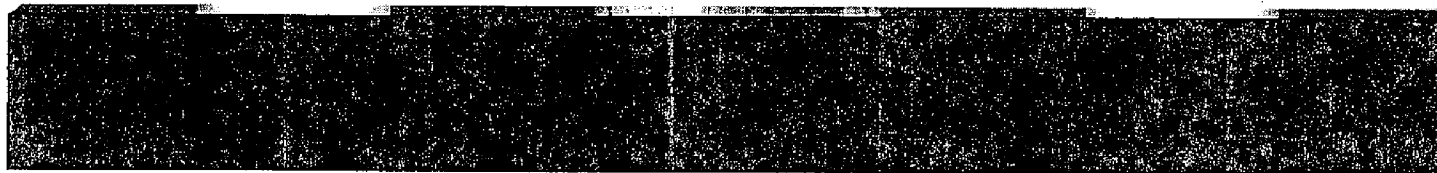
If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation



AAC000418

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-01

Collection Date: 4/8/2005 10:15:00 AM

Client Sample ID: SS7-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	110	6.67		µg/Kg	1	4/12/2005 3:54:00 PM
Surr: p-Terphenyl-d14	75.1	44.9-155		%REC	1	4/12/2005 3:54:00 PM

Lab ID: 0504037-02

Collection Date: 4/8/2005 10:17:00 AM

Client Sample ID: SS7-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	ND	6.67		µg/Kg	1	4/12/2005 4:25:00 PM
Surr: p-Terphenyl-d14	87.0	44.9-155		%REC	1	4/12/2005 4:25:00 PM

Lab ID: 0504037-03

Collection Date: 4/8/2005 10:19:00 AM

Client Sample ID: SS7-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	ND	6.67		µg/Kg	1	4/12/2005 4:57:00 PM
Surr: p-Terphenyl-d14	90.9	44.9-155		%REC	1	4/12/2005 4:57:00 PM

Lab ID: 0504037-04

Collection Date: 4/8/2005 10:15:00 AM

Client Sample ID: SS7-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	146	6.67		µg/Kg	1	4/13/2005 10:37:00 AM
Surr: p-Terphenyl-d14	88.7	44.9-155		%REC	1	4/13/2005 10:37:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-05

Collection Date: 4/8/2005 10:27:00 AM

Client Sample ID: SS7-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	108	6.67		µg/Kg	1	4/19/2005 12:03:00 PM
Surr: p-Terphenyl-d14	101	44.9-155		%REC	1	4/19/2005 12:03:00 PM

Lab ID: 0504037-06

Collection Date: 4/8/2005 10:29:00 AM

Client Sample ID: SS7-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	201	6.67		µg/Kg	1	4/19/2005 12:35:00 PM
Surr: p-Terphenyl-d14	99.9	44.9-155		%REC	1	4/19/2005 12:35:00 PM

Lab ID: 0504037-07

Collection Date: 4/8/2005 10:17:00 AM

Client Sample ID: SS7-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	ND	6.67		µg/Kg	1	4/12/2005 6:00:00 PM
Surr: p-Terphenyl-d14	103	44.9-155		%REC	1	4/12/2005 6:00:00 PM

Lab ID: 0504037-08

Collection Date: 4/8/2005 10:23:00 AM

Client Sample ID: SS7-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	54.7	13.3		µg/Kg	1	4/19/2005 1:06:00 PM
Surr: p-Terphenyl-d14	96.7	44.9-155		%REC	1	4/19/2005 1:06:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-09

Collection Date: 4/8/2005 10:29:00 AM

Client Sample ID: SS7-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	73.3	13.3		µg/Kg	1	4/19/2005 1:38:00 PM
Surr: p-Terphenyl-d14	110	44.9-155		%REC	1	4/19/2005 1:38:00 PM

Lab ID: 0504037-10

Collection Date: 4/8/2005 10:19:00 AM

Client Sample ID: SS7-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	23.3	6.67		µg/Kg	1	4/12/2005 6:31:00 PM
Surr: p-Terphenyl-d14	93.7	44.9-155		%REC	1	4/12/2005 6:31:00 PM

Lab ID: 0504037-11

Collection Date: 4/8/2005 10:25:00 AM

Client Sample ID: SS7-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-12

Collection Date: 4/8/2005 10:31:00 AM

Client Sample ID: SS7-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-13

Collection Date: 4/8/2005 12:00:00 PM

Client Sample ID: SS9-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Copper	109	1.47		mg/Kg	2	4/14/2005 1:10:03 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-14 Collection Date: 4/8/2005 12:10:00 PM

Client Sample ID: SS9-5-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP		E6010				Analyst: das
Copper	102	1.47		mg/Kg	2	4/14/2005 1:25:49 PM

Lab ID: 0504037-15 Collection Date: 4/8/2005 9:23:00 AM

Client Sample ID: SS12-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	117	6.67		µg/Kg	1	4/12/2005 7:02:00 PM
Surr: p-Terphenyl-d14	98.3	44.9-155		%REC	1	4/12/2005 7:02:00 PM

Lab ID: 0504037-16 Collection Date: 4/8/2005 9:25:00 AM

Client Sample ID: SS12-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	78.7	13.3		µg/Kg	1	4/12/2005 7:34:00 PM
Surr: p-Terphenyl-d14	110	44.9-155		%REC	1	4/12/2005 7:34:00 PM

Lab ID: 0504037-17 Collection Date: 4/8/2005 9:25:00 AM

Client Sample ID: SS12-1-D Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	150	33.3		µg/Kg	1	4/13/2005 12:42:00 PM
Surr: p-Terphenyl-d14	108	44.9-155		%REC	1	4/13/2005 12:42:00 PM

Lab ID: 0504037-18 Collection Date: 4/8/2005 9:27:00 AM

Client Sample ID: SS12-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	230	33.3		µg/Kg	1	4/13/2005 12:48:00 AM
Surr: p-Terphenyl-d14	111	44.9-155		%REC	1	4/13/2005 12:48:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-19 Collection Date: 4/8/2005 9:40:00 AM
Client Sample ID: SS12-5-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-QARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	325	6.67		µg/Kg	1	4/12/2005 8:05:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	4/12/2005 8:05:00 PM

Lab ID: 0504037-20 Collection Date: 4/8/2005 9:46:00 AM
Client Sample ID: SS12-10-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-QARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	165	13.3		µg/Kg	1	4/19/2005 4:34:00 PM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	4/19/2005 4:34:00 PM

Lab ID: 0504037-21 Collection Date: 4/8/2005 9:52:00 AM
Client Sample ID: SS12-20-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-QARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	170	6.67		µg/Kg	1	4/19/2005 5:06:00 PM
Surr: p-Terphenyl-d14	111	44.9-155		%REC	1	4/19/2005 5:06:00 PM

Lab ID: 0504037-22 Collection Date: 4/8/2005 9:42:00 AM
Client Sample ID: SS12-5-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-QARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	30.7	13.3		µg/Kg	1	4/12/2005 8:37:00 PM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	4/12/2005 8:37:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0504037**Lab ID:** 0504037-23**Collection Date:** 4/8/2005 9:48:00 AM**Client Sample ID:** SS12-10-1**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	127	13.3		µg/Kg	1	4/19/2005 5:37:00 PM
Surr: p-Terphenyl-d14	116	44.9-155		%REC	1	4/19/2005 5:37:00 PM

Lab ID: 0504037-24**Collection Date:** 4/8/2005 9:54:00 AM**Client Sample ID:** SS12-20-1**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	48.0	6.67		µg/Kg	1	4/19/2005 6:09:00 PM
Surr: p-Terphenyl-d14	101	44.9-155		%REC	1	4/19/2005 6:09:00 PM

Lab ID: 0504037-25**Collection Date:** 4/8/2005 9:44:00 AM**Client Sample ID:** SS12-5-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	123	13.3		µg/Kg	1	4/13/2005 12:11:00 PM
Surr: p-Terphenyl-d14	85.6	44.9-155		%REC	1	4/13/2005 12:11:00 PM

Lab ID: 0504037-26**Collection Date:** 4/8/2005 9:50:00 AM**Client Sample ID:** SS12-10-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM**8270SIM**

Analyst: bda

Benzo(a)pyrene	131	13.3		µg/Kg	1	4/19/2005 6:40:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	4/19/2005 6:40:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-27

Collection Date: 4/8/2005 9:56:00 AM

Client Sample ID: SS12-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	78.7	13.3		µg/Kg	1	4/19/2005 7:12:00 PM
Surr: p-Terphenyl-d14	112	44.9-155		%REC	1	4/19/2005 7:12:00 PM

Lab ID: 0504037-28

Collection Date: 4/8/2005 10:45:00 AM

Client Sample ID: SS15-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	151	6.67		µg/Kg	1	4/12/2005 9:08:00 PM
Surr: p-Terphenyl-d14	93.9	44.9-155		%REC	1	4/12/2005 9:08:00 PM

Lab ID: 0504037-29

Collection Date: 4/8/2005 10:47:00 AM

Client Sample ID: SS15-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	111	6.67		µg/Kg	1	4/13/2005 2:17:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	4/13/2005 2:17:00 PM

Lab ID: 0504037-30

Collection Date: 4/8/2005 10:49:00 AM

Client Sample ID: SS15-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	97.3	13.3		µg/Kg	1	4/13/2005 11:40:00 AM
Surr: p-Terphenyl-d14	88.7	44.9-155		%REC	1	4/13/2005 11:40:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-31

Collection Date: 4/8/2005 11:05:00 AM

Client Sample ID: SS15-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	1040	6.67		µg/Kg	1	4/12/2005 10:42:00 PM
Surr: p-Terphenyl-d14	93.0	44.9-155		%REC	1	4/12/2005 10:42:00 PM

Lab ID: 0504037-32

Collection Date: 4/8/2005 11:11:00 AM

Client Sample ID: SS15-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	1120	6.67		µg/Kg	1	4/19/2005 7:43:00 PM
Surr: p-Terphenyl-d14	96.2	44.9-155		%REC	1	4/19/2005 7:43:00 PM

Lab ID: 0504037-33

Collection Date: 4/8/2005 11:07:00 AM

Client Sample ID: SS15-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	434	6.67		µg/Kg	1	4/12/2005 11:14:00 PM
Surr: p-Terphenyl-d14	91.6	44.9-155		%REC	1	4/12/2005 11:14:00 PM

Lab ID: 0504037-34

Collection Date: 4/8/2005 11:13:00 AM

Client Sample ID: SS15-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	88.0	13.3		µg/Kg	1	4/19/2005 8:15:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/19/2005 8:15:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-35 Collection Date: 4/8/2005 11:15:00 AM
Client Sample ID: SS15-10-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	90.7	13.3		µg/Kg	1	4/19/2005 8:46:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	4/19/2005 8:46:00 PM

Lab ID: 0504037-36 Collection Date: 4/8/2005 11:09:00 AM
Client Sample ID: SS15-5-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	42.0	6.67		µg/Kg	1	4/12/2005 11:45:00 PM
Surr: p-Terphenyl-d14	92.2	44.9-155		%REC	1	4/12/2005 11:45:00 PM

Lab ID: 0504037-37 Collection Date: 4/8/2005 2:40:00 PM
Client Sample ID: SS16-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	53.3	6.67		µg/Kg	1	4/13/2005 12:17:00 AM
Surr: p-Terphenyl-d14	92.8	44.9-155		%REC	1	4/13/2005 12:17:00 AM

Lab ID: 0504037-38 Collection Date: 4/8/2005 2:42:00 PM
Client Sample ID: SS16-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	41.3	6.67		µg/Kg	1	4/14/2005 11:33:00 AM
Surr: p-Terphenyl-d14	96.7	44.9-155		%REC	1	4/14/2005 11:33:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-39

Collection Date: 4/8/2005 2:44:00 PM

Client Sample ID: SS16-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	98.7	6.67		µg/Kg	1	4/14/2005 12:05:00 PM
Surr: p-Terphenyl-d14	96.4	44.9-155		%REC	1	4/14/2005 12:05:00 PM

Lab ID: 0504037-40

Collection Date: 4/8/2005 2:50:00 PM

Client Sample ID: SS16-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	383	6.67		µg/Kg	1	4/14/2005 12:36:00 PM
Surr: p-Terphenyl-d14	99.8	44.9-155		%REC	1	4/14/2005 12:36:00 PM

Lab ID: 0504037-41

Collection Date: 4/8/2005 2:56:00 PM

Client Sample ID: SS16-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	56.0	6.67		µg/Kg	1	4/19/2005 9:18:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	4/19/2005 9:18:00 PM

Lab ID: 0504037-42

Collection Date: 4/8/2005 3:02:00 PM

Client Sample ID: SS16-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	231	6.67		µg/Kg	1	4/19/2005 9:49:00 PM
Surr: p-Terphenyl-d14	92.7	44.9-155		%REC	1	4/19/2005 9:49:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-43 Collection Date: 4/8/2005 2:52:00 PM
Client Sample ID: SS16-5-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	92.7	6.67		µg/Kg	1	4/14/2005 1:08:00 PM
Surr: p-Terphenyl-d14	93.6	44.9-155		%REC	1	4/14/2005 1:08:00 PM

Lab ID: 0504037-44 Collection Date: 4/8/2005 2:58:00 PM
Client Sample ID: SS16-10-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	81.3	6.67		µg/Kg	1	4/19/2005 10:21:00 PM
Surr: p-Terphenyl-d14	81.7	44.9-155		%REC	1	4/19/2005 10:21:00 PM

Lab ID: 0504037-45 Collection Date: 4/8/2005 3:04:00 PM
Client Sample ID: SS16-20-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	173	6.67		µg/Kg	1	4/19/2005 10:52:00 PM
Surr: p-Terphenyl-d14	93.7	44.9-155		%REC	1	4/19/2005 10:52:00 PM

Lab ID: 0504037-46 Collection Date: 4/8/2005 2:54:00 PM
Client Sample ID: SS16-5-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	73.3	6.67		µg/Kg	1	4/14/2005 1:39:00 PM
Surr: p-Terphenyl-d14	103	44.9-155		%REC	1	4/14/2005 1:39:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-47

Collection Date: 4/8/2005 2:54:00 PM

Client Sample ID: SS16-5-2-D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	30.0	6.67		µg/Kg	1	4/14/2005 2:10:00 PM
Surr: p-Terphenyl-d14	96.9	44.9-155		%REC	1	4/14/2005 2:10:00 PM

Lab ID: 0504037-48

Collection Date: 4/8/2005 3:00:00 PM

Client Sample ID: SS16-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-49

Collection Date: 4/8/2005 3:06:00 PM

Client Sample ID: SS16-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-50

Collection Date: 4/7/2005 10:50:00 AM

Client Sample ID: SS17-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	48.7	6.67		µg/Kg	1	4/14/2005 2:42:00 PM
Surr: p-Terphenyl-d14	97.7	44.9-155		%REC	1	4/14/2005 2:42:00 PM

Lab ID: 0504037-51

Collection Date: 4/7/2005 10:52:00 AM

Client Sample ID: SS17-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	24.0	6.67		µg/Kg	1	4/14/2005 6:02:00 PM
Surr: p-Terphenyl-d14	94.9	44.9-155		%REC	1	4/14/2005 6:02:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-52

Collection Date: 4/7/2005 10:52:00 AM

Client Sample ID: SS17-1-D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	67.3	6.67		µg/Kg	1	4/13/2005 12:26:00 PM
Surr: p-Terphenyl-d14	99.2	44.9-155		%REC	1	4/13/2005 12:26:00 PM

Lab ID: 0504037-53

Collection Date: 4/7/2005 10:54:00 AM

Client Sample ID: SS17-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	40.7	6.67		µg/Kg	1	4/14/2005 6:33:00 PM
Surr: p-Terphenyl-d14	95.9	44.9-155		%REC	1	4/14/2005 6:33:00 PM

Lab ID: 0504037-54

Collection Date: 4/7/2005 11:05:00 AM

Client Sample ID: SS17-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	103	6.67		µg/Kg	1	4/14/2005 7:04:00 PM
Surr: p-Terphenyl-d14	99.0	44.9-155		%REC	1	4/14/2005 7:04:00 PM

Lab ID: 0504037-55

Collection Date: 4/7/2005 11:15:00 AM

Client Sample ID: SS17-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	147	6.67		µg/Kg	1	4/19/2005 11:23:00 PM
Surr: p-Terphenyl-d14	91.4	44.9-155		%REC	1	4/19/2005 11:23:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-56
Client Sample ID: SS17-20-0

Collection Date: 4/7/2005 11:09:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	38.0	6.67		µg/Kg	1	4/19/2005 11:55:00 PM
Surr: p-Terphenyl-d14	86.0	44.9-155		%REC	1	4/19/2005 11:55:00 PM

Lab ID: 0504037-57
Client Sample ID: SS17-5-1

Collection Date: 4/7/2005 11:25:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	10.7	6.67		µg/Kg	1	4/14/2005 7:36:00 PM
Surr: p-Terphenyl-d14	85.4	44.9-155		%REC	1	4/14/2005 7:36:00 PM

Lab ID: 0504037-58
Client Sample ID: SS17-10-1

Collection Date: 4/7/2005 11:17:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	77.3	6.67		µg/Kg	1	4/20/2005 12:26:00 AM
Surr: p-Terphenyl-d14	79.2	44.9-155		%REC	1	4/20/2005 12:26:00 AM

Lab ID: 0504037-59
Client Sample ID: SS17-20-1

Collection Date: 4/7/2005 11:27:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	124	6.67		µg/Kg	1	4/20/2005 11:16:00 AM
Surr: p-Terphenyl-d14	93.8	44.9-155		%REC	1	4/20/2005 11:16:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-60 Collection Date: 4/7/2005 11:09:00 AM
Client Sample ID: SS17-5-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	75.3	6.67		µg/Kg	1	4/14/2005 8:07:00 PM
Surr: p-Terphenyl-d14	99.8	44.9-155		%REC	1	4/14/2005 8:07:00 PM

Lab ID: 0504037-61 Collection Date: 4/7/2005 11:19:00 AM
Client Sample ID: SS17-10-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-62 Collection Date: 4/7/2005 11:29:00 AM
Client Sample ID: SS17-20-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-63 Collection Date: 4/7/2005 10:00:00 AM
Client Sample ID: SS18-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	68.7	6.67		µg/Kg	1	4/14/2005 8:38:00 PM
Surr: p-Terphenyl-d14	97.0	44.9-155		%REC	1	4/14/2005 8:38:00 PM

Lab ID: 0504037-64 Collection Date: 4/7/2005 10:02:00 AM
Client Sample ID: SS18-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	54.0	6.67		µg/Kg	1	4/15/2005 11:27:00 AM
Surr: p-Terphenyl-d14	100	44.9-155		%REC	1	4/15/2005 11:27:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-65

Collection Date: 4/7/2005 10:04:00 AM

Client Sample ID: SS18-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	207	6.67		µg/Kg	1	4/14/2005 9:10:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	4/14/2005 9:10:00 PM

Lab ID: 0504037-66

Collection Date: 4/7/2005 10:10:00 AM

Client Sample ID: SS18-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	227	6.67		µg/Kg	1	4/14/2005 9:41:00 PM
Surr: p-Terphenyl-d14	103	44.9-155		%REC	1	4/14/2005 9:41:00 PM

Lab ID: 0504037-67

Collection Date: 4/7/2005 10:20:00 AM

Client Sample ID: SS18-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	321	6.67		µg/Kg	1	4/20/2005 11:48:00 AM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	4/20/2005 11:48:00 AM

Lab ID: 0504037-68

Collection Date: 4/7/2005 10:25:00 AM

Client Sample ID: SS18-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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PAH'S BY GC/MS-OARSIM

8270SIM

Analyst: bda

Benzo(a)pyrene	175	6.67		µg/Kg	1	4/20/2005 12:19:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	4/20/2005 12:19:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-69 Collection Date: 4/7/2005 10:12:00 AM
Client Sample ID: SS18-5-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	185	6.67		µg/Kg	1	4/14/2005 10:13:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	4/14/2005 10:13:00 PM

Lab ID: 0504037-70 Collection Date: 4/7/2005 10:22:00 AM
Client Sample ID: SS18-10-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	42.7	6.67		µg/Kg	1	4/20/2005 12:50:00 PM
Surr: p-Terphenyl-d14	81.2	44.9-155		%REC	1	4/20/2005 12:50:00 PM

Lab ID: 0504037-71 Collection Date: 4/7/2005 10:22:00 AM
Client Sample ID: SS18-10-1-D Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Lab ID: 0504037-72 Collection Date: 4/7/2005 10:24:00 AM
Client Sample ID: SS18-20-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	176	6.67		µg/Kg	1	4/20/2005 1:22:00 PM
Surr: p-Terphenyl-d14	95.8	44.9-155		%REC	1	4/20/2005 1:22:00 PM

Lab ID: 0504037-73 Collection Date: 4/7/2005 10:14:00 AM
Client Sample ID: SS18-5-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	63.3	6.67		µg/Kg	1	4/14/2005 10:44:00 PM
Surr: p-Terphenyl-d14	91.5	44.9-155		%REC	1	4/14/2005 10:44:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-74

Collection Date: 4/7/2005 10:27:00 AM

Client Sample ID: SS18-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	48.7	6.67		µg/Kg	1	4/20/2005 1:53:00 PM
Surr: p-Terphenyl-d14	85.9	44.9-155		%REC	1	4/20/2005 1:53:00 PM

Lab ID: 0504037-75

Collection Date: 4/7/2005 10:29:00 AM

Client Sample ID: SS18-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	573	6.67		µg/Kg	1	4/20/2005 2:25:00 PM
Surr: p-Terphenyl-d14	81.1	44.9-155		%REC	1	4/20/2005 2:25:00 PM

Lab ID: 0504037-76

Collection Date: 4/7/2005 1:00:00 PM

Client Sample ID: SS20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	80.0	6.67		µg/Kg	1	4/14/2005 11:15:00 PM
Surr: p-Terphenyl-d14	96.3	44.9-155		%REC	1	4/14/2005 11:15:00 PM

Lab ID: 0504037-77

Collection Date: 4/7/2005 1:02:00 PM

Client Sample ID: SS20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	421	6.67		µg/Kg	1	4/14/2005 11:47:00 PM
Surr: p-Terphenyl-d14	94.1	44.9-155		%REC	1	4/14/2005 11:47:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maui, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-78 Collection Date: 4/7/2005 1:05:00 PM
Client Sample ID: SS20-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	114	6.67		µg/Kg	1	4/13/2005 12:57:00 PM
Surr: p-Terphenyl-d14	93.6	44.9-155		%REC	1	4/13/2005 12:57:00 PM

Lab ID: 0504037-79 Collection Date: 4/7/2005 1:30:00 PM
Client Sample ID: SS20-5-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	66.0	6.67		µg/Kg	1	4/13/2005 1:28:00 PM
Surr: p-Terphenyl-d14	99.5	44.9-155		%REC	1	4/13/2005 1:28:00 PM

Lab ID: 0504037-80 Collection Date: 4/7/2005 1:40:00 PM
Client Sample ID: SS20-10-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	76.0	6.67		µg/Kg	1	4/20/2005 2:56:00 PM
Surr: p-Terphenyl-d14	90.6	44.9-155		%REC	1	4/20/2005 2:56:00 PM

Lab ID: 0504037-81 Collection Date: 4/7/2005 1:50:00 PM
Client Sample ID: SS20-20-0 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	41.3	6.67		µg/Kg	1	4/20/2005 3:28:00 PM
Surr: p-Terphenyl-d14	85.0	44.9-155		%REC	1	4/20/2005 3:28:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-82

Collection Date: 4/7/2005 1:32:00 PM

Client Sample ID: SS20-5-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	339	6.67		µg/Kg	1	4/13/2005 1:59:00 PM
Surr: p-Terphenyl-d14	95.5	44.9-155		%REC	1	4/13/2005 1:59:00 PM

Lab ID: 0504037-83

Collection Date: 4/7/2005 1:42:00 PM

Client Sample ID: SS20-10-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	14600	267		µg/Kg	40	4/21/2005 12:54:00 PM
Surr: p-Terphenyl-d14	74.6	44.9-155		%REC	1	4/20/2005 3:59:00 PM

Lab ID: 0504037-84

Collection Date: 4/7/2005 1:50:00 PM

Client Sample ID: SS20-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	455	6.67		µg/Kg	1	4/21/2005 8:43:00 AM
Surr: p-Terphenyl-d14	90.5	44.9-155		%REC	1	4/21/2005 8:43:00 AM

Lab ID: 0504037-85

Collection Date: 4/7/2005 1:34:00 PM

Client Sample ID: SS20-5-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	317	6.67		µg/Kg	1	4/13/2005 2:31:00 PM
Surr: p-Terphenyl-d14	90.6	44.9-155		%REC	1	4/13/2005 2:31:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504037

Lab ID: 0504037-86

Collection Date: 4/7/2005 1:44:00 PM

Client Sample ID: SS20-10-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	467	6.67		µg/Kg	1	4/21/2005 9:14:00 AM
Surr: p-Terphenyl-d14	91.2	44.9-155		%REC	1	4/21/2005 9:14:00 AM

Lab ID: 0504037-87

Collection Date: 4/7/2005 1:54:00 PM

Client Sample ID: SS20-20-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	485	6.67		µg/Kg	1	4/21/2005 9:46:00 AM
Surr: p-Terphenyl-d14	84.3	44.9-155		%REC	1	4/21/2005 9:46:00 AM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13194	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	RunID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319566	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND	1.00									

Sample ID	LCS-13194	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	RunID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319567	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		48.1	1.00	50	0	96.2	91.3	111	0	0		

Sample ID	0504037-13AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	RunID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319928	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		206.5	3.47	34.72	109	281	75.1	126	0	0		S

Sample ID	0504037-13AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	RunID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319929	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		108.2	1.45	36.23	109	-2.08	75.1	126	206.5	62.5	20	S,R

Sample ID	0504037-13ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	RunID:	TJAIRIS_050413B	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319569	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		75.32	0.833	0	0	0	0	0	109	36.5	20	R

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319574		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.34	1.00	50	0	98.7	90	110	0	0		
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319931		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.18	1.00	50	0	98.4	90	110	0	0		
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Sample ID	CCB-13194	SampType:	ICB	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A			
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319926			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	0.25	1.00	0	0	0	0	0	0	0		
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Sample ID	ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050413B					
Client ID: ZZZZZ	Batch ID: 13194	TestNo: E6010	AnalysisDate: 4/13/2005	SeqNo: 319565							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	49.93	1.00	50	0	99.9	90	110	0	0		
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Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			AnalysisDate:	4/14/2005	SeqNo:	319925		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	50.52	1.00	50	0	101	90	110	0	0		
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13193	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/12/2005	Run ID: 5973P_050413A					
Client ID: ZZZZZ	Batch ID: 13193	TestNo: 8270SIM	Analysis Date: 4/13/2005			SeqNo: 319661					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67									
Surr:p-Terphenyl-d14	6981	0	6667	0	105	44.9	155	0	0		

Sample ID	MB-13192	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/12/2005	Run ID: 5973G_050414B					
Client ID: ZZZZZ	Batch ID: 13192	TestNo: 8270SIM			Analysis Date: 4/14/2005	SeqNo: 319806					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67									
Surr:p-Terphenyl-d14	6807	0	6667	0	102	44.9	155	0	0		

Sample ID	MB-13205	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/14/2005	Run ID: 5973G_050414C					
Client ID: ZZZZZ	Batch ID: 13205	TestNo: 8270SIM			Analysis Date: 4/15/2005	SeqNo: 319863					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67	0	0	0	0	0	0	0		
Surr:p-Terphenyl-d14	7733	0	6667	0	116	44.9	155	0	0		

Sample ID	MB-13228	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/18/2005	Run ID: 5973G_050419A					
Client ID: ZZZZZ	Batch ID: 13228	TestNo: 8270SIM			Analysis Date: 4/19/2005	SeqNo: 320785					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	2.667	6.67									J
Surr:p-Terphenyl-d14	7478	0	6667	0	112	44.9	155	0	0		

Sample ID	MB-13229	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/18/2005	Run ID: 5973G_050420A					
Client ID: ZZZZZ	Batch ID: 13229	TestNo: 8270SIM	Analysis Date: 4/20/2005	SeqNo: 320982							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67									
Surr:p-Terphenyl-d14	6033	0	6667	0	90.5	44.9	155	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13190	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	321266	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND	6.67									
Surr: p-Terphenyl-d14		6655	0	6667	0	99.8	44.9	155	0	0		

Sample ID	LCS-13190	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	319437	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162	6.67	166.7	0	97.2	37.7	137	0	0		

Sample ID	LCS-13193	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319662	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		146	6.67	166.7	0	87.6	37.7	137	0	0		

Sample ID	LCS-13192	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319807	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		178	6.67	166.7	0	107	37.7	137	0	0		

Sample ID	LCS-13228	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320786	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162.7	6.67	166.7	2.667	96	37.7	137	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	LCS-13229	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320983	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		160.7	6.67	166.7	0	96.4	37.7	137	0	0		

Sample ID	0504037-17AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319556	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		283.3	33.3	166.7	150	80	64.6	110	0	0		

Sample ID	0504037-52AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319663	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		236.7	6.67	166.7	67.33	102	64.6	110	0	0		

Sample ID	0504037-47AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/15/2005	SeqNo:	319860	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		213.3	6.67	166.7	30	110	64.6	110	0	0		

Sample ID	0504037-05AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		282.7	6.67	166.7	108	105	64.6	110	0	0		

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 8

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		246	6.67	166.7	124	73.2	64.6	110	0	0		

Sample ID	0504037-17AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319557	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		296.7	33.3	166.7	150	88	64.6	110	283.3	4.60	20	

Sample ID	0504037-52AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319664	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		301.3	6.67	166.7	67.33	140	64.6	110	236.7	24.0	20	SR

Sample ID	0504037-47AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		185.3	6.67	166.7	30	93.2	64.6	110	213.3	14.0	20	

Sample ID	0504037-05AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320810	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		323.3	6.67	166.7	108	129	64.6	110	282.7	13.4	20	S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		221.3	6.67	166.7	124	58.4	64.6	110	246	10.6	20	S

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	319435	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		402	6.67	333.3	0	121	70	130	0	0		

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050413A	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319550	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		400.7	6.67	333.3	0	120	70	130	0	0		

Sample ID	CCV-13193	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_050413A	
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319660	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		148	6.67	133.3	0	111	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319805	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		72.67	6.67	66.67	0	109	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B		
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0					
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Sample ID	CCV-13205	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414C		
Client ID:	ZZZZZ	Batch ID:	13205	TestNo:	8270SIM			AnalysisDate:	4/14/2005	SeqNo:	319862		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0					
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Sample ID	CCV-13228	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050419A		
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320784		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	154.7	6.67	133.3	0	116	70	130	0	0					
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Sample ID	CCV-13228	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050419A		
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320791		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	164.7	6.67	133.3	0	124	70	130	0	0					
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Sample ID	CCV-13229	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050420A		
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320981		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	156.7	6.67	133.3	0	118	70	130	0	0					
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504037
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13194	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319566	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND	1.00									

Sample ID	LCS-13194	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319567	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		48.1	1.00	50	0	96.2	91.3	111	0	0		

Sample ID	0504037-13AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319928	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		206.5	3.47	34.72	109	281	75.1	126	0	0		S

Sample ID	0504037-13AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319929	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		108.2	1.45	36.23	109	-2.08	75.1	126	206.5	62.5	20	S,R

Sample ID	0504037-13ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B	
Client ID:	SS9-0	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319569	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		75.32	0.833	0	0	0	0	0	109	36.5	20	R

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B			
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319574			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper		49.34		1.00	50	0		98.7	90	110	0	0	
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A			
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319931			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper		49.18		1.00	50	0		98.4	90	110	0	0	
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Sample ID	CCB-13194	SampType:	ICB	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319926		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper		0.25		1.00	0	0		0	0	0	0	0	
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Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319565		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper		49.93		1.00	50	0		99.9	90	110	0	0	
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Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319925		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper		50.52		1.00	50	0		101	90	110	0	0	
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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 8

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13193	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A		
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319661		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67												
Surr:p-Terphenyl-d14	6981	0	6667	0	105	44.9	155	0	0					

Sample ID	MB-13192	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B		
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319806		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67												
Surr:p-Terphenyl-d14	6807	0	6667	0	102	44.9	155	0	0					

Sample ID	MB-13205	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/14/2005	Run ID:	5973G_050414C			
Client ID:	ZZZZZ	Batch ID:	13205	TestNo:	8270SIM			Analysis Date:	4/15/2005	SeqNo:	319863			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67												
Surr:p-Terphenyl-d14	7733	0	6667	0	116	44.9	155	0	0					

Sample ID	MB-13228	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A		
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320785		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	2.667	6.67												J
Surr:p-Terphenyl-d14	7478	0	6667	0	112	44.9	155	0	0					

Sample ID	MB-13229	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A			
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320982			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67												
Surr:p-Terphenyl-d14	6033	0	6667	0	90.5	44.9	155	0	0					

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13190	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	321266	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND	6.67									
Surr: p-Terphenyl-d14		6655	0	6667	0	99.8	44.9	155	0	0		

Sample ID	LCS-13190	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	319437	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162	6.67	166.7	0	97.2	37.7	137	0	0		

Sample ID	LCS-13193	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319662	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		146	6.67	166.7	0	87.6	37.7	137	0	0		

Sample ID	LCS-13192	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319807	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		178	6.67	166.7	0	107	37.7	137	0	0		

Sample ID	LCS-13228	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320786	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162.7	6.67	166.7	2.667	96	37.7	137	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 I - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 4 of 8

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	LCS-13229	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320983	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		160.7	6.67	166.7	0	96.4	37.7	137	0	0		

Sample ID	0504037-17AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319556	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		283.3	33.3	166.7	150	80	64.6	110	0	0		

Sample ID	0504037-52AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319663	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		236.7	6.67	166.7	67.33	102	64.6	110	0	0		

Sample ID	0504037-47AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/15/2005	SeqNo:	319860	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		213.3	6.67	166.7	30	110	64.6	110	0	0		

Sample ID	0504037-05AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		282.7	6.67	166.7	108	105	64.6	110	0	0		

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 8

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320984	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		246	6.67	166.7	124	73.2	64.6	110	0	0		

Sample ID	0504037-17AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/11/2005	Run ID:	5973G_050413A	
Client ID:	SS12-1-D	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319557	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		296.7	33.3	166.7	150	88	64.6	110	283.3	4.60	20	

Sample ID	0504037-52AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A	
Client ID:	SS17-1-D	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319664	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		301.3	6.67	166.7	67.33	140	64.6	110	236.7	24.0	20	SR

Sample ID	0504037-47AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973G_050414B	
Client ID:	SS16-5-2-D	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		185.3	6.67	166.7	30	93.2	64.6	110	213.3	14.0	20	

Sample ID	0504037-05AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050419A	
Client ID:	SS7-10-0	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320810	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		323.3	6.67	166.7	108	129	64.6	110	282.7	13.4	20	S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 8

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	SS17-20-1	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320985	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		221.3	6.67	166.7	124	58.4	64.6	110	246	10.6	20	S

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050412C	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/12/2005	SeqNo:	319435	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		402	6.67	333.3	0	121	70	130	0	0		

Sample ID	CCV-13190	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050413A	
Client ID:	ZZZZZ	Batch ID:	13190	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319550	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		400.7	6.67	333.3	0	120	70	130	0	0		

Sample ID	CCV-13193	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_050413A	
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319660	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		148	6.67	133.3	0	111	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	13192	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319805	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		72.67	6.67	66.67	0	109	70	130	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B	
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0504037
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414B			
Client ID:	ZZZZZ	Batch ID:	R35846	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319846			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0					
----------------	----	------	-------	---	-----	----	-----	---	---	--	--	--	--	--

Sample ID	CCV-13205	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050414C		
Client ID:	ZZZZZ	Batch ID:	13205	TestNo:	8270SIM			Analysis Date:	4/14/2005	SeqNo:	319862		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0					
----------------	----	------	-------	---	-----	----	-----	---	---	--	--	--	--	--

Sample ID	CCV-13228	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050419A			
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			Analysis Date:	4/19/2005	SeqNo:	320784			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	154.7	6.67	133.3	0	116	70	130	0	0					
----------------	-------	------	-------	---	-----	----	-----	---	---	--	--	--	--	--

Sample ID	CCV-13228	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050419A		
Client ID:	ZZZZZ	Batch ID:	13228	TestNo:	8270SIM			AnalysisDate:	4/19/2005	SeqNo:	320791		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	164.7	6.67	133.3	0	124	70	130	0	0					
----------------	-------	------	-------	---	-----	----	-----	---	---	--	--	--	--	--

Sample ID	CCV-13229	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050420A			
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320981			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	156.7	6.67	133.3	0	118	70	130	0	0					
----------------	-------	------	-------	---	-----	----	-----	---	---	--	--	--	--	--

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

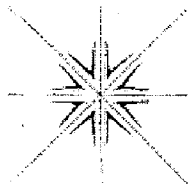
B - Analyte detected in the associated Method Blank

Page 8 of 8

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page 1 of 1



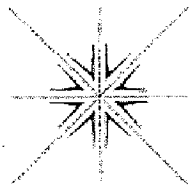
(503) 612-8572 - Fax

Invoice To _____ P.O. No. _____

Signature _____ Printed _____				Analyses										For Laboratory Use																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Turn Around Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush _____ Specify _____														Lab Job No. <u>054037</u> Shipped Via <u>Specialty</u> Air Bill No. _____			Temperature On Receipt <u>6</u> °C Specialty Analytical Containers? Y/N Specialty Analytical Trip Blanks? Y/N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Rush Analyses Must Be Scheduled With The Lab In Advance				No. of Containers	Benzene (a) pyrene	Cu, Pb	Pb																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

CHAIN OF CUSTODY RECORD

Page 2 of 2



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave, Ste 200
Portland, OR
Phone 971-544-2139 Fax 971-544-2140
Project No. 9100-01-02 Project Name AACP
Invoice To Gott B. P.O. No. 1630

Collected By:
Signature Charles Wice
Printed Charles Wice

Signature _____
Printed _____

Turn Around Time

☒ Normal

☐ Rush

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

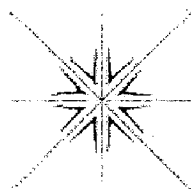
				No. of Containers	Analyses										For Laboratory Use		
Date	Time	Sample I.D.	Matrix		Pure (a) pyrene	Cu	Pb								Lab Job No.	Shipped Via	Air Bill No.
04/08/05	1200	SS9-0	S	1	X	X	X										
		SS9-1															
		SS9-2															
	1210	SS9-5-0	S	1	X	X	X										
		SS9-10-9															
		SS9-20-0															
		SS9-5-1															
		SS9-10-1															
		SS9-20-1															
		SS9-5-2															
		SS9-10-2															
		SS9-20-2															

Relinquished By: <u>CW</u>	Date: <u>4-11-05</u>	Time: <u>12:00</u>	Received By: <u>Nikki Tipton</u>	Relinquished By:	Date:	Time:
Company: <u>MFA</u>			Company: <u>Specialty</u>	Company:		

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.			Received For Lab By: <u>Nikki Tipton</u>	Date: <u>4-11-05</u>	Time: <u>1440</u>
Copies: White-Original	Yellow-Project File	Pink-Customer Copy			

CHAIN OF CUSTODY RECORD

Page 3 of



Specialty Analytical

19761 S.W. 95th Place
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Contact Person/Project Manager Anne St. John
Company MFA
Address 3121 SW Mendy Ave Ste 200
Portland, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100-01-02 Project Name AACP
Invoice To Scott B. P.O. No. 1630

Collected By:
Signature Charles Wice
Printed Charles Wice

Signature _____
Printed _____

Turn Around Time

☒ Normal
☐ Rush

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

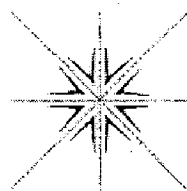
				Analyses												For Laboratory Use		
Date	Time	Sample I.D.	Matrix	No. of Containers													Lab Job No.	Lab I.D.
04/08/05	9:23	SS12-0	S	1	X	X	X										-15	
	9:25	SS12-1 (DUPE)		2													-16/-17	
	9:27	SS12-2		1														
	9:40	SS12-5-0		1														
	9:46	SS12-10-0		1														
	9:52	SS12-20-0		1														
	9:42	SS12-5-1		1														
	9:48	SS12-10-1		1														
	9:54	SS12-20-1		1														
	9:44	SS12-5-2		1														
	9:50	SS12-10-2		1														
	9:56	SS12-20-2		1													-27	

Relinquished By: <u>W</u>	Date: <u>4-11-05</u>	Time: <u>1320</u>	Received By: <u>Nikki Tilton</u>	Relinquished By: <u> </u>	Date: <u> </u>	Time: <u> </u>
Company: <u>MFA</u>			Company: <u>Specialty</u>	Company: <u> </u>		

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.			Received For Lab By: <u>Nikki Tilton</u>	Date: <u>4-11-05</u>	Time: <u>1440</u>
Copies: White-Original	Yellow-Project File	Pink-Customer Copy			

CHAIN OF CUSTODY RECORD

Page 34 of 101



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
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Contact Person/Project Manager Aime St John

Company MFA

Address 3121 SW Moody Ave, Ste 200

Phone 971-544-2139 Fax 971-544-2140

Project No. 8100-01-02 Project Name AACD

Invoice To Scott B. P.O. No. 1630

Collected By: _____

Signature Charles Wice

Printed Charles Wice

Signature _____

Printed _____

Turn Around Time

☒ Normal

☐ Rush

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses										For Laboratory Use							
Date	Time	Sample I.D.	Matrix	No. of Containers	Percol(a) exposure	Cu	Pb								Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?	
04/08/05	1045	SS15-0 SS15-0	S	1	X	X	X									0514038	SPECIALTY		60 °C	Y/N	Y/N
	1047	SS15-1 SS15-1		1																	
	1049	SS15-2 SS15-2		1																	
	1105	SS15-5-0 SS15-5-0		1																	
	1111	SS15-10-0 SS15-10-0		1																	
	1107	SS15-5-1 SS15-5-1		1																	
	1113	SS15-10-1 SS15-10-1		1																	
	1115	SS15-10-2 SS15-10-2	↓	1																	
	1109	SS15-5-2 SS15-5-2	↓	1		↓	↓	↓													-36
		SS15-5-2	↓																		
		SS15-5-2	↓																		
		SS15-5-2	↓																		

Relinquished By: <u>aw</u>	Date	Time	Received By: <u>Nikki Torton</u>	Relinquished By:	Date	Time
Company: <u>MFA</u>	<u>4-11-05</u>	<u>1230</u>	Company: <u>Specialty</u>	Company: <u>7</u>		

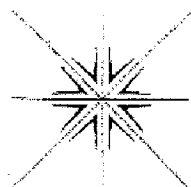
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.

Copies: White-Original Yellow-Project File Pink-Customer Copy

Received For Lab By: <u>Nikki Torton</u>	Date	Time
	<u>4-11-05</u>	<u>1440</u>

CHAIN OF CUSTODY RECORD

Page 45 of 45



Specialty Analytical

19761 S.W. 95th Place
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Contact Person/Project Manager Anna St John
Company MFA
Address 3121 SW Moody Ave, Ste. 200
Portland, OR 97239
Phone 971-540-2139 Fax 971-544-2140
Project No. 2100-01.02 Project Name AACP
Invoice To Scott B P.O. No. 1630

Collected By: _____
Signature Charles Wice
Printed Charles Wice
Signature _____
Printed _____

Turn Around Time
☒ Normal
☐ Rush

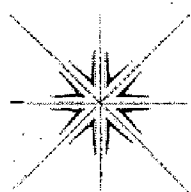
Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

				No. of Containers	Analyses										For Laboratory Use		
Date	Time	Sample I.D.	Matrix		Benzo(a)pyrene	Cu	Pb								Lab Job No.	Comments	Lab I.D.
04/07/05	1440	SS16-0	S	1	X	X	X								1504039		
	1442	SS16-1		1											Specialty		
	1444	SS16-2		1													
	1450	SS16-5-0		1													
	1456	SS16-10-0		1													
	1502	SS16-20-0		1													
	1452	SS16-5-1		1													
	1458	SS16-10-1		1													
	1504	SS16-20-1		1													
	1444	SS16-5-2 (DUPE)		2											* PU name duplicated	-46-47	
	1500	SS16-10-2		1											sample as:		
	1506	SS16-20-2		1											SS16-5-2-D	-49	
Relinquished By: <u>W</u>				Date	Time	Received By: <u>Nikki Tilton</u>				Relinquished By:				Date	Time		
Company: <u>MFA</u>				<u>4/11/05 1220</u>		Company: <u>Specialty</u>				Company:							
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.										Received For Lab By: <u>Nikki Tilton</u>				Date	Time		
Copies: White-Original Yellow-Project File Pink-Customer Copy														<u>4-11-05</u>	<u>1440</u>		

CHAIN OF CUSTODY RECORD

Page 6 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
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Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave., Ste 200
Portland, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 8160.01.02 Project Name AACP
Invoice To Scott B. P.O. No. 1630

Collected By:
Signature Charles Wice
Printed Charles Wice

Signature _____
Printed _____

Turn Around Time
☒ Normal
☐ Rush _____

Specify

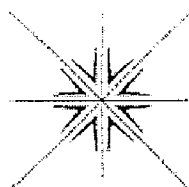
Rush Analyses Must Be Scheduled With The Lab In Advance

No. of Containers	Analyses										For Laboratory Use		
											Lab Job No.	Shipped Via	
											0504031	Specialty	
											Air Bill No.		
											Temperature On Receipt	6 °C	
											Specialty Analytical Containers?	Y / N	
											Specialty Analytical Trip Blanks?	Y / N	
												Comments	Lab I.D.
1	X												-50
2											* PLS name duplicated		51-52
											sample as:		
											SS 17-1-D		
				</									

Relinquished By: <u>CW</u>	Date: <u>4-11-05</u>	Time: <u>1220</u>	Received By: <u>Nikki Tilton</u>	Relinquished By: <u>[Signature]</u>	Date: <u>4-11-05</u>	Time: <u>1442</u>
Company: <u>MFA</u>			Company: <u>Specialty</u>	Company: <u>[Signature]</u>		
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.				Received For Lab By: <u>Nikki Tilton</u>		
Copies: White-Original		Yellow-Project File		Pink-Customer Copy		

CHAIN OF CUSTODY RECORD

Page 31 of



Specialty Analytical

19761 S.W. 95th Place
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Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave, Ste. 200
Portland, Oregon 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100.01.02 Project Name AACP
Invoice To Scott Burgess P.O. No. 1630

Collected By: Charles Wice
Signature Charles Wice
Printed Charles Wice

Signature _____
Printed _____

Turn Around Time

☒ Normal

☐ Rush

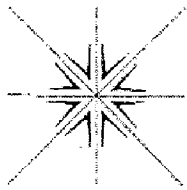
Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses												For Laboratory Use					
Date	Time	Sample I.D.	Matrix	No. of Containers	Benzo(a)pyrene	Cu	Pb									Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?
04/07/05	10 00	SS18-0	S	1	X	X	X												6	Y	N
	10 02	SS18-1	S																		
	10 04	SS18-2	S																		
	10 10	SS18-5-0	S																		
	10 10	SS18-10-0	S																		
	10 15	SS18-20-0	S																		
	10 12	SS18-5-1	S																		
	10 22	SS18-10-1 (DUPE)	S	2																	
	10 24	SS18-20-1	S																		
	10 14	SS18-5-2	S																		
	10 27	SS18-10-2	S																		
	10 29	SS18-20-2	S																		
Relinquished By: <u>CW</u>			Date	Time	Received By: <u>Nikki Tilton</u>			Relinquished By:			Date	Time									
Company: <u>MFA</u>			<u>4.11.05</u>	<u>1200</u>	Company: <u>Specialty</u>			Company: <u>?</u>													
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.												Received For Lab By: <u>Nikki Tilton</u>		Date	Time						
Copies: White-Original Yellow-Project File Pink-Customer Copy														<u>4.11.05</u>	<u>1440</u>						

CHAIN OF CUSTODY RECORD

Page 88 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John
Company MFA
Address 3121 SW Moody Ave, Ste 200
Portland, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 3100.01.02 Project Name AACP
Invoice To Scott B. P.O. No. 1630

Collected By: Charles Wier
Signature Charles Wier
Printed Charles Wier
Signature _____
Printed _____

Turn Around Time

☒ Normal

☐ Rush _____

Specify

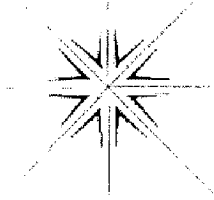
Rush Analyses Must Be Scheduled With The Lab In Advance

				No. of Containers	Analyses										For Laboratory Use		
Date	Time	Sample I.D.	Matrix												Lab Job No.	Comments	Lab I.D.
04/07/05	1300	SS20-0	S	1	X	X	X								0514039		-76
	1302	SS20-1													Specialty		
	1305	SS20-2															
	1330	SS20-5-0															
	1340	SS20-10-0															
	1350	SS20-20-0															
	1332	SS20-5-1															
	1342	SS20-10-1															
	1352	SS20-20-1															
	1334	SS20-5-2															
	1344	SS20-10-2															
✓	1354	SS20-20-2															-89

Relinquished By: <u>CW</u>	Date	Time	Received By: <u>Nicki Tilton</u>	Relinquished By: <u>7</u>	Date	Time
Company: <u>MFA</u>	<u>4/11/05</u>	<u>1330</u>	Company: <u>Specialty</u>	Company: <u>7</u>		

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.

Copies: White-Original	Yellow-Project File	Pink-Customer Copy	Received For Lab By: <u>Nicki Tilton</u>	Date	Time
				<u>4-11-05</u>	<u>1440</u>



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

April 21, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX: (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0504038

Specialty Analytical received 13 samples on 4/11/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

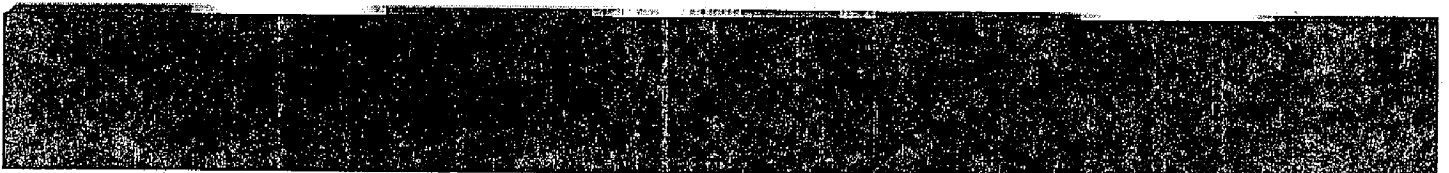
If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation



AAC000465

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID:	0504038-01	Collection Date:	4/7/2005 2:00:00 PM			
Client Sample ID:	SS21-0	Matrix:	SOIL			
Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<hr/>						
TOTAL METALS BY ICP		E6010			Analyst: das	
Lead	107	1.61		mg/Kg	1	4/13/2005 2:44:16 PM
PAH'S BY GC/MS-OARSIM		8270SIM			Analyst: bda	
Benzo(a)pyrene	123	6.67		µg/Kg	1	4/13/2005 3:02:00 PM
Surr: p-Terphenyl-d14	94.1	44.9-155		%REC	1	4/13/2005 3:02:00 PM

Lab ID:	0504038-02	Collection Date:	4/7/2005 2:02:00 PM			
Client Sample ID:	SS21-1	Matrix:	SOIL			
Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	5.88	1.67		mg/Kg	1	4/13/2005 2:49:55 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	532	6.67		µg/Kg	1	4/13/2005 3:33:00 PM
Surr: p-Terphenyl-d14	91.0	44.9-155		%REC	1	4/13/2005 3:33:00 PM

Lab ID:	0504038-03	Collection Date:	4/7/2005 2:04:00 PM			
Client Sample ID:	SS21-2	Matrix:	SOIL			
Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	7.06	1.47		mg/Kg	1	4/13/2005 2:55:11 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	703	6.67		µg/Kg	1	4/13/2005 4:04:00 PM
Surr: p-Terphenyl-d14	90.1	44.9-155		%REC	1	4/13/2005 4:04:00 PM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID: 0504038-04

Collection Date: 4/7/2005 2:10:00 PM

Client Sample ID: SS21-5-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	111	1.67		mg/Kg	1	4/13/2005 3:00:28 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	178	6.67		µg/Kg	1	4/13/2005 4:35:00 PM
Surr: p-Terphenyl-d14	91.3	44.9-155		%REC	1	4/13/2005 4:35:00 PM

Lab ID: 0504038-05

Collection Date: 4/7/2005 2:10:00 PM

Client Sample ID: SS21-5-0-D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	85.3	1.67		mg/Kg	1	4/13/2005 3:05:56 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	183	6.67		µg/Kg	1	4/13/2005 5:06:00 PM
Surr: p-Terphenyl-d14	88.2	44.9-155		%REC	1	4/13/2005 5:06:00 PM

Lab ID: 0504038-06

Collection Date: 4/7/2005 2:15:00 PM

Client Sample ID: SS21-10-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	59.5	1.69		mg/Kg	1	4/19/2005 3:50:23 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	143	6.67		µg/Kg	1	4/21/2005 10:17:00 AM
Surr: p-Terphenyl-d14	79.0	44.9-155		%REC	1	4/21/2005 10:17:00 AM

Lab ID: 0504038-07

Collection Date: 4/7/2005 2:21:00 PM

Client Sample ID: SS21-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT		Analyst: ADM		
Hold	HOLD				1	4/20/2005

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID: 0504038-08 Collection Date: 4/7/2005 2:12:00 PM
Client Sample ID: SS21-5-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	3.73	1.56		mg/Kg	1	4/13/2005 3:11:24 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	1580	13.3		µg/Kg	2	4/14/2005 9:40:00 AM
Surr: p-Terphenyl-d14	85.9	44.9-155		%REC	1	4/13/2005 5:38:00 PM

Lab ID: 0504038-09 Collection Date: 4/7/2005 2:17:00 PM
Client Sample ID: SS21-10-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	4.52	1.61		mg/Kg	1	4/19/2005 4:24:06 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	455	6.67		µg/Kg	1	4/21/2005 10:49:00 AM
Surr: p-Terphenyl-d14	89.1	44.9-155		%REC	1	4/21/2005 10:49:00 AM

Lab ID: 0504038-10 Collection Date: 4/7/2005 2:23:00 PM
Client Sample ID: SS21-20-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	30.2	1.72		mg/Kg	1	4/19/2005 4:29:23 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	327	6.67		µg/Kg	1	4/21/2005 11:20:00 AM
Surr: p-Terphenyl-d14	91.2	44.9-155		%REC	1	4/21/2005 11:20:00 AM

Specialty Analytical

Date: 21-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504038

Lab ID: 0504038-11 Collection Date: 4/7/2005 2:14:00 PM

Client Sample ID: SS21-5-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	9.48	1.61		mg/Kg	1	4/13/2005 3:16:54 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	1330	6.67		µg/Kg	1	4/13/2005 6:09:00 PM
Surr: p-Terphenyl-d14	83.4	44.9-155		%REC	1	4/13/2005 6:09:00 PM

Lab ID: 0504038-12 Collection Date: 4/7/2005 2:19:00 PM

Client Sample ID: SS21-10-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	9.20	1.79		mg/Kg	1	4/19/2005 4:50:47 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	749	6.67		µg/Kg	1	4/21/2005 11:51:00 AM
Surr: p-Terphenyl-d14	97.2	44.9-155		%REC	1	4/21/2005 11:51:00 AM

Lab ID: 0504038-13 Collection Date: 4/7/2005 2:25:00 PM

Client Sample ID: SS21-20-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP		E6010		Analyst: das		
Lead	6.52	1.69		mg/Kg	1	4/19/2005 4:56:02 PM
PAH'S BY GC/MS-OARSIM		8270SIM		Analyst: bda		
Benzo(a)pyrene	481	6.67		µg/Kg	1	4/21/2005 12:23:00 PM
Surr: p-Terphenyl-d14	81.8	44.9-155		%REC	1	4/21/2005 12:23:00 PM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504038
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13194	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319566		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper ND 1.00

Sample ID	MBLK-13232	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320813		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 2.00

Sample ID	LCS-13194	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319567		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 48.1 1.00 50 0 96.2 91.3 111 0 0

Sample ID	LCS-13232	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/18/2005	Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320814		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 99.5 2.00 100 0 99.5 84.9 109 0 0

Sample ID	0504037-13AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/12/2005	Run ID: TJAIRIS_050414A					
Client ID: ZZZZZ	Batch ID: 13194	TestNo: E6010	Analysis Date: 4/14/2005	SeqNo: 319928							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper 206.5 3.47 34.72 109 281 75.1 126 0 0 S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0504038
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0504038-06AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/18/2005	Run ID: TJAIRIS_050419A					
Client ID:	SS21-10-0	Batch ID: 13232	TestNo: E6010		Analysis Date: 4/19/2005	SeqNo: 320817					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	158.8	1.56	78.12	59.53	127	84.9	109	0	0		SRP

Sample ID	0504038-06AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/18/2005	Run ID: TJAIRIS_050420A					
Client ID:	SS21-10-0	Batch ID: 13232	TestNo: E6010		Analysis Date: 4/20/2005	SeqNo: 320888					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	160.1	15.6	78.12	51.95	138	84.9	109	0	0		S

Sample ID	0504037-13AMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/12/2005	Run ID: TJAIRIS_050414A					
Client ID:	ZZZZZ	Batch ID: 13194	TestNo: E6010		Analysis Date: 4/14/2005	SeqNo: 319929					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	108.2	1.45	36.23	109	-2.08	75.1	126	206.5	62.5	20	S,R

Sample ID	0504038-06AMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/18/2005	Run ID: TJAIRIS_050419A					
Client ID:	SS21-10-0	Batch ID: 13232	TestNo: E6010		Analysis Date: 4/19/2005	SeqNo: 320818					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	134.4	1.79	89.29	59.53	83.8	84.9	109	0	0		SRP

Sample ID	0504038-06AMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/18/2005	Run ID: TJAIRIS_050420A					
Client ID:	SS21-10-0	Batch ID: 13232	TestNo: E6010		Analysis Date: 4/20/2005	SeqNo: 320889					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	129.2	17.9	89.29	51.95	86.5	84.9	109	167.2	25.6	20	R

Sample ID	0504037-13ADUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/12/2005	Run ID: TJAIRIS_050413B					
Client ID:	ZZZZZ	Batch ID: 13194	TestNo: E6010		Analysis Date: 4/13/2005	SeqNo: 319569					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504038
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0504037-13ADUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/12/2005	Run ID: TJAIRIS_050413B					
Client ID: ZZZZZ	Batch ID: 13194	TestNo: E6010	Analysis Date: 4/13/2005			SeqNo: 319569					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	75.32	0.833	0	0	0	0	0	109	36.5	20	R

Sample ID	0504038-06ADUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg	Prep Date: 4/18/2005	Run ID: TJAIRIS_050419A					
Client ID:	SS21-10-0	Batch ID: 13232	TestNo: E6010		Analysis Date: 4/19/2005	SeqNo: 320816					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	74.74	1.75	0	0	0	0	0	59.53	22.6	20	R

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050413B					
Client ID:	ZZZZZ	Batch ID: 13194	TestNo: E6010		Analysis Date: 4/13/2005	SeqNo: 319574					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	49.34	1.00	50	0	98.7	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050414A					
Client ID: ZZZZZ		Batch ID: 13194	TestNo: E6010		Analysis Date: 4/14/2005	SeqNo: 319931					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	49.18	1.00	50	0	98.4	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A			
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320823			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		102.4		2.00	100	0		102	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		RunID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320830		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte-detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320830		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		100.8		2.00	100	0	101	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050420A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/20/2005	SeqNo:	320891		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		101.4		2.00	100	0	101	90	110	0	0		

Sample ID	CCB-13194	SampType:	ICB	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	4/12/2005	Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319926		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		0.25		1.00	0	0	0	0	0	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050413B		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/13/2005	SeqNo:	319565		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		49.93		1.00	50	0	99.9	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050414A		
Client ID:	ZZZZZ	Batch ID:	13194	TestNo:	E6010			Analysis Date:	4/14/2005	SeqNo:	319925		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		50.52		1.00	50	0	101	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320812		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504038
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050419A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/19/2005	SeqNo:	320812		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		102.2		2.00	100	0	102	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050420A		
Client ID:	ZZZZZ	Batch ID:	13232	TestNo:	E6010			Analysis Date:	4/20/2005	SeqNo:	320884		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		101.8		2.00	100	0	102	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 7

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504038
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13193	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A			
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319661			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67												
Surr:p-Terphenyl-d14	6981	0	6667	0	105	44.9	155	0	0					

Sample ID	MB-13229	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A	
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320982	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	ND	6.67												
Surr:p-Terphenyl-d14	6033	0	6667	0	90.5	44.9	155	0	0					

Sample ID	LCS-13193	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/12/2005	Run ID:	5973P_050413A			
Client ID:	ZZZZZ	Batch ID:	13193	TestNo:	8270SIM			Analysis Date:	4/13/2005	SeqNo:	319662			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	146	6.67	166.7	0	87.6	37.7	137	0	0					
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Sample ID	LCS-13229	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/18/2005	Run ID:	5973G_050420A		
Client ID:	ZZZZZ	Batch ID:	13229	TestNo:	8270SIM			Analysis Date:	4/20/2005	SeqNo:	320983		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	160.7	6.67	166.7	0	96.4	37.7	137	0	0					
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Sample ID	0504037-52AMS	SampType: MS	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/12/2005	Run ID: 5973P_050413A					
Client ID: ZZZZZ	Batch ID: 13193	TestNo: 8270SIM	Analysis Date: 4/13/2005	SeqNo: 319663							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzo(a)pyrene	236.7	6.67	166.7	67.33	102	64.6	110	0	0					
----------------	-------	------	-------	-------	-----	------	-----	---	---	--	--	--	--	--

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504038
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0504037-59AMS	SampType: MS	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/18/2005	Run ID: 5973G_050420A					
Client ID:	ZZZZZ	Batch ID: 13229	TestNo: 8270SIM		Analysis Date: 4/20/2005	SeqNo: 320984					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	246	6.67	166.7	124	73.2	64.6	110	0	0		

Sample ID	0504037-52AMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/12/2005	Run ID: 5973P_050413A					
Client ID:	ZZZZZ	Batch ID: 13193	TestNo: 8270SIM		Analysis Date: 4/13/2005	SeqNo: 319664					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	301.3	6.67	166.7	67.33	140	64.6	110	236.7	24.0	20	SR

Sample ID	0504037-59AMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 4/18/2005	Run ID: 5973G_050420A					
Client ID:	ZZZZZ	Batch ID: 13229	TestNo: 8270SIM		Analysis Date: 4/20/2005	SeqNo: 320985					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	221.3	6.67	166.7	124	58.4	64.6	110	246	10.6	20	S

Sample ID	CCV-13193	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973P_050413A					
Client ID:	ZZZZZ	Batch ID: 13193	TestNo: 8270SIM		Analysis Date: 4/13/2005	SeqNo: 319660					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	148	6.67	133.3	0	111	70	130	0	0		

Sample ID	CCV-13229	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_050420A					
Client ID:	ZZZZZ	Batch ID: 13229	TestNo: 8270SIM		Analysis Date: 4/20/2005	SeqNo: 320981					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	156.7	6.67	133.3	0	118	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

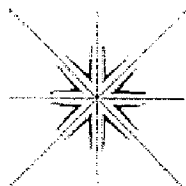
B - Analyte detected in the associated Method Blank

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in-control.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Page 8 of



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John

Company MFA

Address 3121 SW Moody Ave., Ste. 200

Portland, OR 97239

Phone 971-544-2139 Fax 971-544-2140

Project No. 0100.01.02 Project Name AACP

Invoice To Scott B. P.O. No. 1630

Collected By:

Signature Charles Wice

Printed Charles Wice

Signature _____

Printed _____

Turn Around Time

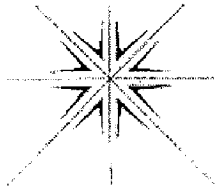
☒ Normal

☐ Rush

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

				Analyses										For Laboratory Use															
Date	Time	Sample I.D.	Matrix	No. of Containers	Pb	Cd	Cu	Pb	Cd	Cu	Pb	Cd	Cu	Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?										
04/07/05	1400	SS21-0	S		X	X	X							0504038	SPECIALTY		60	Y/N	Y/N										
	1402	SS21-1																											
	1404	SS21-2																											
	1410	SS21-5-0 (DUPE)																											
	1415	SS21-10-0																											
	1421	SS21-20-0																											
	1412	SS21-5-1																											
	1417	SS21-10-1																											
	1423	SS21-20-1																											
	1414	SS21-5-2																											
	1419	SS21-10-2																											
	1425	SS21-20-2																											
Relinquished By: <u>CW</u>				Date	Time	Received By: <u>Nikki Tilton</u>				Relinquished By:				Date	Time														
Company: <u>MFA</u>				<u>4-11-05</u>	<u>1420</u>	Company: <u>RELIANT</u>				Company:																			
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.										Received For Lab By: <u>Nikki Tilton</u>																			
Copies: White-Original										Yellow-Project File										Pink-Customer Copy									



Specialty Analytical

19761 S.W. 95th Avenue
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Fax (503) 612-8572
1 (877) 612-9007

April 27, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0504089

Specialty Analytical received 3 samples on 4/22/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

AAC000479

Specialty Analytical

Date: 27-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504089

Lab ID: 0504089-01
Client Sample ID: SS15-20-0

Collection Date: 4/22/2005 10:50:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	1150	6.67		µg/Kg	1	4/26/2005 10:07:00 AM
Surr: p-Terphenyl-d14	109	44.9-155		%REC	1	4/26/2005 10:07:00 AM

Lab ID: 0504089-02
Client Sample ID: SS15-20-1

Collection Date: 4/22/2005 10:55:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	203	6.67		µg/Kg	1	4/25/2005 5:26:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/25/2005 5:26:00 PM

Lab ID: 0504089-03
Client Sample ID: SS15-20-1.7

Collection Date: 4/22/2005 11:20:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	191	13.3		µg/Kg	1	4/25/2005 5:57:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/25/2005 5:57:00 PM

CLIENT: Maul, Foster & Alongi
 Work Order: 0504089
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13269	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321624	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND	6.67									
Surr:p-Terphenyl-d14		6956	0	6667	0	104	44.9	155	0	0		

Sample ID	LCS-13269	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321625	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		168.7	6.67	166.7	0	101	37.7	137	0	0		

Sample ID	0504089-01AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	SS15-20-0	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321715	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		1317	33.3	166.7	1223	56.4	64.6	110	0	0		S/MC

Sample ID	0504089-01AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	SS15-20-0	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321716	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		1443	33.3	166.7	1223	132	64.6	110	0	0	20	S/MC

Sample ID	CCV-13269	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050425A	
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321623	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		157.3	6.67	133.3	0	118	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504089
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-13269	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050425A		
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321712		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162.7		6.67	133.3	0	122	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

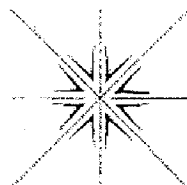
B - Analyte detected in the associated Method Blank

Page 2 of 2

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page 1 of 1

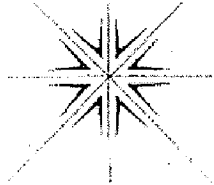


19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Invoice To Scott Barnes P.O. No. 0100.01.02

Rush Analyses Must Be Scheduled With The Lab In Advance

[illegible]



Specialty Analytical

19761 S.W. 95th Avenue
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Fax (503) 612-8572
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April 27, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0504089

Specialty Analytical received 3 samples on 4/22/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

AAC000485

Specialty Analytical

Date: 27-Apr-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0504089

Lab ID: 0504089-01

Collection Date: 4/22/2005 10:50:00 AM

Client Sample ID: SS15-20-0

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	1150	6.67		µg/Kg	1	4/26/2005 10:07:00 AM
Surr: p-Terphenyl-d14	109	44.9-155		%REC	1	4/26/2005 10:07:00 AM

Lab ID: 0504089-02

Collection Date: 4/22/2005 10:55:00 AM

Client Sample ID: SS15-20-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	203	6.67		µg/Kg	1	4/25/2005 5:26:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/25/2005 5:26:00 PM

Lab ID: 0504089-03

Collection Date: 4/22/2005 11:20:00 AM

Client Sample ID: SS15-20-1.7

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM		8270SIM				Analyst: bda
Benzo(a)pyrene	191	13.3		µg/Kg	1	4/25/2005 5:57:00 PM
Surr: p-Terphenyl-d14	117	44.9-155		%REC	1	4/25/2005 5:57:00 PM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0504089
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13269	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321624	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND	6.67									
Surr: p-Terphenyl-d14		6956	0	6667	0	104	44.9	155	0	0		

Sample ID	LCS-13269	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321625	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		168.7	6.67	166.7	0	101	37.7	137	0	0		

Sample ID	0504089-01AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	SS15-20-0	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321715	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		1317	33.3	166.7	1223	56.4	64.6	110	0	0		S,MC

Sample ID	0504089-01AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	4/25/2005	Run ID:	5973G_050425A	
Client ID:	SS15-20-0	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321716	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		1443	33.3	166.7	1223	132	64.6	110	0	0	20	S,MC

Sample ID	CCV-13269	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050425A	
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/25/2005	SeqNo:	321623	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		157.3	6.67	133.3	0	118	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0504089
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-13269	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050425A	
Client ID:	ZZZZZ	Batch ID:	13269	TestNo:	8270SIM			Analysis Date:	4/26/2005	SeqNo:	321712	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		162.7	6.67	133.3	0	122	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

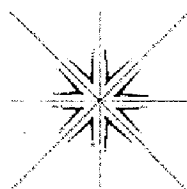
B - Analyte detected in the associated Method Blank

Page 2 of 2

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page 1 of 1

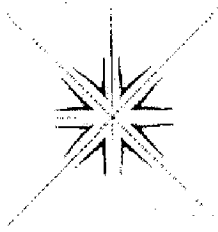


19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Invoice To Scott Barnes P.O. No. 0100.01.02

Rush Analyses Must Be Scheduled With The Lab In Advance

[illegible]



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

June 06, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0505158

Specialty Analytical received 32 samples on 5/27/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-01 Collection Date: 5/24/2005 9:56:00 AM
Client Sample ID: SS17-50-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	88.0	6.67		µg/Kg	1	6/1/2005 1:27:00 PM
Surr: p-Terphenyl-d14	115	44.9-155		%REC	1	6/1/2005 1:27:00 PM

Lab ID: 0505158-02 Collection Date: 5/24/2005 9:57:00 AM
Client Sample ID: SS17-50-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	43.3	6.67		µg/Kg	1	6/1/2005 1:58:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	6/1/2005 1:58:00 PM

Lab ID: 0505158-03 Collection Date: 5/24/2005 10:05:00 AM
Client Sample ID: SS17-40-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	50.0	6.67		µg/Kg	1	6/1/2005 2:30:00 PM
Surr: p-Terphenyl-d14	121	44.9-155		%REC	1	6/1/2005 2:30:00 PM

Lab ID: 0505158-04 Collection Date: 5/24/2005 10:06:00 AM
Client Sample ID: SS17-40-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	311	6.67		µg/Kg	1	6/1/2005 3:01:00 PM
Surr: p-Terphenyl-d14	126	44.9-155		%REC	1	6/1/2005 3:01:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0505158**Lab ID:** 0505158-05**Collection Date:** 5/24/2005 10:10:00 AM**Client Sample ID:** SS17-30-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	21.3	6.67		µg/Kg	1	6/1/2005 4:55:00 PM
Surr: p-Terphenyl-d14	125	44.9-155		%REC	1	6/1/2005 4:55:00 PM

Lab ID: 0505158-06**Collection Date:** 5/24/2005 10:11:00 AM**Client Sample ID:** SS17-30-1**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	86.7	6.67		µg/Kg	1	6/1/2005 5:26:00 PM
Surr: p-Terphenyl-d14	113	44.9-155		%REC	1	6/1/2005 5:26:00 PM

Lab ID: 0505158-07**Collection Date:** 5/24/2005 10:17:00 AM**Client Sample ID:** SS18-50-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	118	6.67		µg/Kg	1	6/1/2005 5:58:00 PM
Surr: p-Terphenyl-d14	116	44.9-155		%REC	1	6/1/2005 5:58:00 PM

Lab ID: 0505158-08**Collection Date:** 5/24/2005 10:22:00 AM**Client Sample ID:** SS18-40-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	318	6.67		µg/Kg	1	6/1/2005 6:29:00 PM
Surr: p-Terphenyl-d14	130	44.9-155		%REC	1	6/1/2005 6:29:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-09

Collection Date: 5/24/2005 10:30:00 AM

Client Sample ID: SS18-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	42.7	6.67		µg/Kg	1	6/1/2005 7:01:00 PM
Surr: p-Terphenyl-d14	126	44.9-155		%REC	1	6/1/2005 7:01:00 PM

Lab ID: 0505158-10

Collection Date: 5/24/2005 11:25:00 AM

Client Sample ID: SS20-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	317	6.67		µg/Kg	1	6/1/2005 7:32:00 PM
Surr: p-Terphenyl-d14	106	44.9-155		%REC	1	6/1/2005 7:32:00 PM

Lab ID: 0505158-11

Collection Date: 5/24/2005 11:30:00 AM

Client Sample ID: SS20-40-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	135	6.67		µg/Kg	1	6/1/2005 8:04:00 PM
Surr: p-Terphenyl-d14	102	44.9-155		%REC	1	6/1/2005 8:04:00 PM

Lab ID: 0505158-12

Collection Date: 5/24/2005 11:35:00 AM

Client Sample ID: SS20-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	81.3	6.67		µg/Kg	1	6/1/2005 8:35:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	6/1/2005 8:35:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-13

Collection Date: 5/24/2005 1:03:00 PM

Client Sample ID: SS21-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	950	6.67		µg/Kg	1	6/1/2005 9:07:00 PM
Surr: p-Terphenyl-d14	118	44.9-155		%REC	1	6/1/2005 9:07:00 PM

Lab ID: 0505158-14

Collection Date: 5/24/2005 1:06:00 PM

Client Sample ID: SS21-40-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	145	6.67		µg/Kg	1	6/1/2005 9:38:00 PM
Surr: p-Terphenyl-d14	106	44.9-155		%REC	1	6/1/2005 9:38:00 PM

Lab ID: 0505158-15

Collection Date: 5/24/2005 1:10:00 PM

Client Sample ID: SS21-30-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	447	6.67		µg/Kg	1	6/1/2005 10:10:00 PM
Surr: p-Terphenyl-d14	120	44.9-155		%REC	1	6/1/2005 10:10:00 PM

Lab ID: 0505158-16

Collection Date: 5/24/2005 2:13:00 PM

Client Sample ID: SS16-50-2

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	528	6.67		µg/Kg	1	6/1/2005 10:41:00 PM
Surr: p-Terphenyl-d14	128	44.9-155		%REC	1	6/1/2005 10:41:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-17 Collection Date: 5/24/2005 2:20:00 PM
Client Sample ID: SS16-40-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	358	6.67		µg/Kg	1	6/1/2005 11:12:00 PM
Surr: p-Terphenyl-d14	105	44.9-155		%REC	1	6/1/2005 11:12:00 PM

Lab ID: 0505158-18 Collection Date: 5/24/2005 2:27:00 PM
Client Sample ID: SS16-30-2 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	225	6.67		µg/Kg	1	6/1/2005 11:44:00 PM
Surr: p-Terphenyl-d14	127	44.9-155		%REC	1	6/1/2005 11:44:00 PM

Lab ID: 0505158-19 Collection Date: 5/25/2005 9:05:00 AM
Client Sample ID: SS12-50-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	365	6.67		µg/Kg	1	6/2/2005 12:15:00 AM
Surr: p-Terphenyl-d14	118	44.9-155		%REC	1	6/2/2005 12:15:00 AM

Lab ID: 0505158-20 Collection Date: 5/25/2005 9:10:00 AM
Client Sample ID: SS12-40-1 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	132	6.67		µg/Kg	1	6/2/2005 12:47:00 AM
Surr: p-Terphenyl-d14	126	44.9-155		%REC	1	6/2/2005 12:47:00 AM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-21

Collection Date: 5/25/2005 9:17:00 AM

Client Sample ID: SS12-30-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	262	6.67		µg/Kg	1	6/2/2005 10:43:00 AM
Surr: p-Terphenyl-d14	132	44.9-155		%REC	1	6/2/2005 10:43:00 AM

Lab ID: 0505158-22

Collection Date: 5/25/2005 9:40:00 AM

Client Sample ID: SS7-50-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	38.7	6.67		µg/Kg	1	6/2/2005 3:25:00 PM
Surr: p-Terphenyl-d14	120	44.9-155		%REC	1	6/2/2005 3:25:00 PM

Lab ID: 0505158-23

Collection Date: 5/25/2005 9:48:00 AM

Client Sample ID: SS7-40-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	40.0	33.3		µg/Kg	5	6/3/2005 9:09:00 AM
Surr: p-Terphenyl-d14	91.1	44.9-155		%REC	5	6/3/2005 9:09:00 AM

Lab ID: 0505158-24

Collection Date: 5/25/2005 9:55:00 AM

Client Sample ID: SS7-30-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM		Analyst: bda		
Benzo(a)pyrene	74.7	6.67		µg/Kg	1	6/2/2005 4:28:00 PM
Surr: p-Terphenyl-d14	136	44.9-155		%REC	1	6/2/2005 4:28:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02**Lab Order:** 0505158**Lab ID:** 0505158-25**Collection Date:** 5/25/2005 9:41:00 AM**Client Sample ID:** SS7-50-1D**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	14.7	6.67		µg/Kg	1	6/2/2005 11:14:00 AM
Surr: p-Terphenyl-d14	133	44.9-155		%REC	1	6/2/2005 11:14:00 AM

Lab ID: 0505158-26**Collection Date:** 5/25/2005 10:48:00 AM**Client Sample ID:** SS15-50-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	37.3	6.67		µg/Kg	1	6/2/2005 11:46:00 AM
Surr: p-Terphenyl-d14	125	44.9-155		%REC	1	6/2/2005 11:46:00 AM

Lab ID: 0505158-27**Collection Date:** 5/25/2005 10:59:00 AM**Client Sample ID:** SS15-40-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	325	6.67		µg/Kg	1	6/2/2005 12:17:00 PM
Surr: p-Terphenyl-d14	134	44.9-155		%REC	1	6/2/2005 12:17:00 PM

Lab ID: 0505158-28**Collection Date:** 5/25/2005 11:10:00 AM**Client Sample ID:** SS15-30-2**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	88.7	6.67		µg/Kg	1	6/2/2005 12:48:00 PM
Surr: p-Terphenyl-d14	144	44.9-155		%REC	1	6/2/2005 12:48:00 PM

Specialty Analytical

Date: 06-Jun-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0505158

Lab ID: 0505158-29

Collection Date: 5/25/2005 10:50:00 AM

Client Sample ID: SS15-50-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	39.3	6.67		µg/Kg	1	6/2/2005 1:20:00 PM
Surr: p-Terphenyl-d14	131	44.9-155		%REC	1	6/2/2005 1:20:00 PM

Lab ID: 0505158-30

Collection Date: 5/25/2005 11:00:00 AM

Client Sample ID: SS15-40-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	36.0	6.67		µg/Kg	1	6/2/2005 1:51:00 PM
Surr: p-Terphenyl-d14	123	44.9-155		%REC	1	6/2/2005 1:51:00 PM

Lab ID: 0505158-31

Collection Date: 5/25/2005 11:11:00 AM

Client Sample ID: SS15-30-1

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	30.7	6.67		µg/Kg	1	6/2/2005 2:23:00 PM
Surr: p-Terphenyl-d14	131	44.9-155		%REC	1	6/2/2005 2:23:00 PM

Lab ID: 0505158-32

Collection Date: 5/25/2005 11:12:00 AM

Client Sample ID: SS15-30-2D

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS-OARSIM (8270C)		8270SIM				Analyst: bda
Benzo(a)pyrene	4250	33.3		µg/Kg	5	6/2/2005 5:00:00 PM
Surr: p-Terphenyl-d14	116	44.9-155		%REC	1	6/2/2005 2:54:00 PM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0505158
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13503	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A			
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330222			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67										
Surr:p-Terphenyl-d14		8075		0	6667	0		121	44.9	155	0	0		

Sample ID	MB-13504	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A			
Client ID:	ZZZZZ	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330628			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		ND		6.67										
Surr:p-Terphenyl-d14		7071		0	6667	0		106	44.9	155	0	0		

Sample ID	LCS-13503	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A			
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330223			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		124		6.67	166.7	0		74.4	37.7	137	0	0		

Sample ID	LCS-13504	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A			
Client ID:	ZZZZZ	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330629			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		150		6.67	166.7	0		90	37.7	137	0	0		

Sample ID	0505158-01AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A			
Client ID:	SS17-50-2	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330224			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		184.7		6.67	166.7	88		58	64.6	110	0	0		S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0505158
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0505158-21AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A	
Client ID:	SS12-30-1	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330631	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		258.7	6.67	166.7	262	-2	64.6	110	0	0		S

Sample ID	0505158-01AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050601A	
Client ID:	SS17-50-2	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330225	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		276.7	6.67	166.7	88	113	64.6	110	184.7	39.9	20	SR

Sample ID	0505158-21AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	5/27/2005	Run ID:	5973G_050602A	
Client ID:	SS12-30-1	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330632	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		276	6.67	166.7	262	8.4	64.6	110	258.7	6.48	20	S

Sample ID	CCV-13503	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050601A	
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330221	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		139.3	6.67	133.3	0	104	70	130	0	0		

Sample ID	CCV-13503	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050601A	
Client ID:	ZZZZZ	Batch ID:	13503	TestNo:	8270SIM			Analysis Date:	6/1/2005	SeqNo:	330230	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		160.7	6.67	133.3	0	120	70	130	0	0		

Sample ID	CCV-13504	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050602A	
Client ID:	ZZZZZ	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330627	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0505158
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-13504	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050602A	
Client ID:	ZZZZZ	Batch ID:	13504	TestNo:	8270SIM			Analysis Date:	6/2/2005	SeqNo:	330627	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene		165.3	6.67	133.3	0	124	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

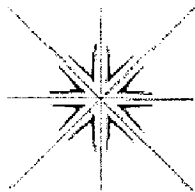
Page 3 of 3

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Page 1 of 3



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St John

Company MFA

Address 7223 NE Hazel Dell Ave.

Phone 360 694-2691

Fax 360 906 1958

Project No. 0106 01 02

Project Name AACA

Invoice To _____

P.O. No. _____

Collected By:

Signature Charles Wice

Printed Charles Wice

Signature _____

Printed _____

Turn Around Time

☒ Normal

☐ Rush

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

No. of Containers		Analyses										For Laboratory Use	
Date	Time	Sample I.D.	Matrix									Lab Job No.	Lab I.D.
05/24/05	9:56	SS17-50-2	S	1	X							0505158	
	9:57	SS17-60-1										Specialty	
	10:05	SS17-40-2											
	10:06	SS17-40-1											
	10:10	SS17-10-2											
	10:11	SS17-30-1											
	10:17	SS18-50-2											
	10:27	SS18-40-2											
	10:30	SS18-30-2											
	11:25	SS20-50-2											
	11:30	SS20-40-2											
	11:35	SS20-30-2											

Temperature On Receipt 18 °C

Specialty Analytical Containers? Y/N

Specialty Analytical Trip Blanks? Y/N

Relinquished By:	Date	Time	Received By:	Date	Time
Company:			Company:		

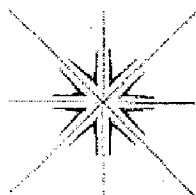
Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.

Copies: White-Original Yellow-Project File Pink-Customer Copy

Received For Lab By:	Date	Time
<u>Nikki Sifton</u>	<u>5/27/05</u>	<u>9:15</u>

CHAIN OF CUSTODY RECORD

Page 2 of 3



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St John

Company MFA

Address 7223 NE Hawk Dr Ave.

Phone 360 614 2691 Fax 360 6906 1958

Project No. 0100-01 02 Project Name AACP

Invoice To _____ P.O. No. _____

Collected By:

Signature Charles Wice

Printed Charles Wice

Signature _____

Printed _____

Turn Around Time

☒ Normal

☐ Rush

Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses										For Laboratory Use	
															Lab Job No.	Shipped Via
05/24/05	1303	5521-50-2	S	1	X										0505158	Specialty
	1306	5521-AD-2														
	1310	5521-30-2														
	1413	5516-50-2														
	1420	5516-40-2														
	1427	5516-30-2														
05/25/05	9:05	5512-50-1														
	9:10	5512-40-1														
	9:17	5512-20-1														
	9:40	5507-50-1														
	9:49	5507-40-1														
	9:55	5507-30-1														

Lab Job No. 0505158
Shipped Via Specialty
Air Bill No. _____
Temperature On Receipt 18 °C
Specialty Analytical Containers? Y/N
Specialty Analytical Trip Blanks? Y/N

Date	Time	Sample I.D.	Matrix	No. of Containers	Comments	Lab I.D.
05/24/05	1303	5521-50-2	S	1	X	
	1306	5521-AD-2				
	1310	5521-30-2				
	1413	5516-50-2				
	1420	5516-40-2				
	1427	5516-30-2				
05/25/05	9:05	5512-50-1				
	9:10	5512-40-1				
	9:17	5512-20-1				
	9:40	5507-50-1				
	9:49	5507-40-1				
	9:55	5507-30-1				

Relinquished By: Charles Wice Date _____ Time _____
Company: MFA

Received By: _____ Date _____ Time _____
Company: _____

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.

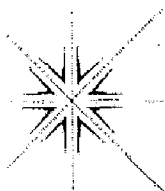
Copies: White-Original

Yellow-Project File

Pink-Customer Copy

Received For Lab By: Nikki Johnston Date 5/27/05 Time 1:15

Page 3 of 3



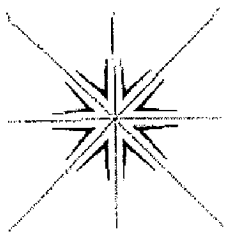
(503) 612-8572 - Fax

Rush Analyses Must Be Scheduled With The Lab In Advance

P.O. No

[illegible]

SCRAPINGS



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

July 29, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AAC Scraping / 0100.01.02

Dear Anna St. John:

Order No.: 0507080

Specialty Analytical received 1 sample on 7/20/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 29-Jul-05

CLIENT: Maul, Foster & Alongi
Project: AAC Scraping / 0100.01.02
Lab Order: 0507080

CASE NARRATIVE

The MS/MSD for VOC's by EPA 8260 failed control limits (low). A matrix interference was confirmed by replicate analysis. An LCS/LCSD was performed to demonstrate analytical control.

Specialty Analytical

Date: 29-Jul-05

CLIENT: Maul, Foster & Alongi
Lab Order: 0507080
Project: AAC Scraping / 0100.01.02
Lab ID: 0507080-01

Client Sample ID: P1
Collection Date: 7/19/2005 11:39:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HCID						
			NWHCID		Analyst: das	
Gasoline	ND	20.6		mg/Kg-dry	1	7/21/2005
Mineral Spirits	ND	20.6		mg/Kg-dry	1	7/21/2005
Kerosene	ND	51.5		mg/Kg-dry	1	7/21/2005
Diesel	ND	51.5		mg/Kg-dry	1	7/21/2005
Lube Oil	Lube Oil	103		mg/Kg-dry	1	7/21/2005
Surr: BFB	77.4	50-150		%REC	1	7/21/2005
Surr: o-Terphenyl	88.7	50-150		%REC	1	7/21/2005
NWTPH-DX						
			NWTPH-DX		Analyst: das	
Diesel	135	15.4	A1,K	mg/Kg-dry	1	7/23/2005
Lube Oil	629	51.5		mg/Kg-dry	1	7/23/2005
Surr: o-Terphenyl	81.0	50-150		%REC	1	7/23/2005
TOTAL METALS BY ICP						
			E6010		Analyst: zau	
Arsenic	26.4	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
Barium	117	2.00		mg/Kg	2	7/22/2005 5:16:55 PM
Cadmium	1.03	0.100		mg/Kg	1	7/21/2005 5:31:43 PM
Chromium	80.6	1.00		mg/Kg	2	7/22/2005 5:16:55 PM
Lead	159	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
Selenium	ND	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
Silver	ND	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
TCLP METALS						
			E1311/6010/7470		Analyst: zau	
Lead, TCLP	ND	0.0200		mg/L	1	7/28/2005 11:33:31 AM
MERCURY, TOTAL						
			SW7471		Analyst: zau	
Mercury	0.0484	0.0143		mg/Kg	1	7/22/2005
VOLATILES BY GC/MS						
			SW8260B		Analyst: seb	
1,1,1,2-Tetrachloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1,1-Trichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1,2,2-Tetrachloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1,2-Trichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1-Dichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1-Dichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1-Dichloropropene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,3-Trichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,3-Trichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,4-Trichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,4-Trimethylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dibromo-3-chloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dibromoethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM

Specialty Analytical

Date: 29-Jul-05

CLIENT: Maul, Foster & Alongi
 Lab Order: 0507080
 Project: AAC Scraping / 0100.01.02
 Lab ID: 0507080-01

Client Sample ID: P1
 Collection Date: 7/19/2005 11:39:00 AM
 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		SW8260B		Analyst: seb		
1,2-Dichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,3,5-Trimethylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,3-Dichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,3-Dichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,4-Dichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
2,2-Dichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
2-Butanone	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
2-Chlorotoluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
2-Hexanone	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
4-Chlorotoluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
4-Isopropyltoluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
4-Methyl-2-pentanone	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
Acetone	ND	50.0		µg/Kg	1	7/22/2005 9:24:00 AM
Benzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromochloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromodichloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromoform	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromomethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Carbon disulfide	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Carbon tetrachloride	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chloroform	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
cis-1,2-Dichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
cis-1,3-Dichloropropene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Dibromochloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Dibromomethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Dichlorodifluoromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Ethylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Hexachlorobutadiene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Isopropylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
m,p-Xylene	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
Methyl tert-butyl ether	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Methylene chloride	ND	50.0		µg/Kg	1	7/22/2005 9:24:00 AM
n-Butylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
n-Propylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Naphthalene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
o-Xylene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM

Specialty Analytical

Date: 29-Jul-05

CLIENT: Maul, Foster & Alongi
Lab Order: 0507080
Project: AAC Scraping / 0100.01.02
Lab ID: 0507080-01

Client Sample ID: P1
Collection Date: 7/19/2005 11:39:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		SW8260B		Analyst: seb		
sec-Butylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Styrene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
tert-Butylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Tetrachloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Toluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
trans-1,2-Dichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
trans-1,3-Dichloropropene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Trichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Trichlorofluoromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Vinyl chloride	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Surr: 1,2-Dichloroethane-d4	79.2	71.5-112		%REC	1	7/22/2005 9:24:00 AM
Surr: 4-Bromofluorobenzene	83.2	75.7-122		%REC	1	7/22/2005 9:24:00 AM
Surr: Dibromofluoromethane	82.6	64.3-124		%REC	1	7/22/2005 9:24:00 AM
Surr: Toluene-d8	90.7	74.9-120		%REC	1	7/22/2005 9:24:00 AM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507080
 Project: AAC Scraping / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13908	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	7/21/2005	Run ID:	TJAIRIS_050721C
Client ID:	ZZZZZ	Batch ID:	13908	TestNo:	E6010			Analysis Date:	7/21/2005	SeqNo:	342678
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	2.00									
Barium	ND	1.00									
Cadmium	ND	0.100									
Chromium	ND	0.500									
Lead	ND	2.00									
Selenium	ND	2.00									
Silver	ND	2.00									

Sample ID	LCS-13908	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	7/21/2005	Run ID:	TJAIRIS_050721C
Client ID:	ZZZZZ	Batch ID:	13908	TestNo:	E6010			Analysis Date:	7/21/2005	SeqNo:	342679
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	101.9	2.00	100	0	102	85.1	107	0	0		
Barium	51.88	1.00	50	0	104	85.7	110	0	0		
Cadmium	5.05	0.100	5	0	101	87.2	109	0	0		
Chromium	25.89	0.500	25	0	104	84	113	0	0		
Lead	105.4	2.00	100	0	105	84.9	109	0	0		
Selenium	102.7	2.00	100	0	103	88.7	111	0	0		
Silver	51.1	2.00	50	0	102	79.3	109	0	0		

Sample ID	0507081-01AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg-dry	Prep Date:	7/21/2005	Run ID:	TJAIRIS_050721C
Client ID:	ZZZZZ	Batch ID:	13908	TestNo:	E6010			Analysis Date:	7/21/2005	SeqNo:	342682
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	241.8	4.71	235.4	4.414	101	86.1	109	0	0		
Barium	216.1	2.35	117.7	102.3	96.6	75	125	0	0		
Cadmium	12.03	0.235	11.77	0.3279	99.4	86.4	113	0	0		
Chromium	85.64	1.18	58.85	27.47	98.8	75	121	0	0		
Lead	255.4	4.71	235.4	0	108	84.9	109	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0507080
 Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0507081-01AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg-dry	Prep Date: 7/21/2005	Run ID: TJAIRIS_050721C					
Client ID: ZZZZZ	Batch ID: 13908	TestNo: E6010	Analysis Date: 7/21/2005			SeqNo: 342682					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium	233.6	4.71	235.4	0	99.2	77.7	116	0	0		
Silver	120.2	4.71	117.7	0	102	75	123	0	0		

Sample ID	0507081-01AMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg-dry	Prep Date: 7/21/2005	Run ID: TJAIRIS_050721C					
Client ID:	ZZZZZ	Batch ID: 13908	TestNo: E6010		Analysis Date: 7/21/2005	SeqNo: 342683					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	249.4	4.82	240.8	4.414	102	86.1	109	241.8	3.12	20	
Barium	208.9	2.41	120.4	102.3	88.6	75	125	216.1	3.35	20	
Cadmium	12.37	0.241	12.04	0.3279	100	86.4	113	12.03	2.83	20	
Chromium	85.4	1.20	60.19	27.47	96.2	75	121	85.64	0.286	20	
Lead	260	4.82	240.8	0	108	84.9	109	255.4	1.79	20	
Selenium	241.5	4.82	240.8	0	100	77.7	116	233.6	3.33	20	
Silver	125.9	4.82	120.4	0	105	75	123	120.2	4.69	20	

Sample ID	0507081-01ADUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg-dry	Prep Date: 7/21/2005	Run ID: TJAIRIS_050721C					
Client ID: ZZZZZ	Batch ID: 13908	TestNo: E6010	Analysis Date: 7/21/2005			SeqNo: 342681					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	5.04	0	0	0	0	0	4.414	0	20	
Barium	84.47	2.52	0	0	0	0	0	102.3	19.1	20	
Cadmium	ND	0.252	0	0	0	0	0	0.3279	0	20	
Chromium	22.8	1.26	0	0	0	0	0	27.47	18.6	20	
Lead	ND	5.04	0	0	0	0	0	0	0	20	
Selenium	ND	5.04	0	0	0	0	0	0	0	20	
Silver	ND	5.04	0	0	0	0	0	0	0	20	

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050721C					
Client ID:	ZZZZZ	Batch ID: 13908	TestNo: E6010		Analysis Date: 7/21/2005	SeqNo: 342677					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 16

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507080
Project: AAC Scraping / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050721C					
Client ID: ZZZZZ	Batch ID: 13908	TestNo: E6010	Analysis Date: 7/21/2005	SeqNo: 342677							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	101.3	2.00	100	0	101	90	110	0	0		
Barium	51.56	1.00	50	0	103	90	110	0	0		
Cadmium	4.85	0.100	5	0	97	90	110	0	0		
Chromium	25.47	0.500	25	0	102	90	110	0	0		
Lead	104.6	2.00	100	0	105	90	110	0	0		
Selenium	99.19	2.00	100	0	99.2	90	110	0	0		
Silver	52.21	2.00	50	0	104	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050721C					
Client ID: ZZZZZ	Batch ID: 13908	TestNo: E6010	AnalysisDate: 7/21/2005	SeqNo: 342686							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	100.7	2.00	100	0	101	90	110	0	0		
Barium	50.1	1.00	50	0	100	90	110	0	0		
Cadmium	4.99	0.100	5	0	99.8	90	110	0	0		
Chromium	25	0.500	25	0	100	90	110	0	0		
Lead	103	2.00	100	0	103	90	110	0	0		
Selenium	98.99	2.00	100	0	99	90	110	0	0		
Silver	52.62	2.00	50	0	105	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:				Run ID: TJAIRIS_050721C			
Client ID: ZZZZZ		Batch ID: 13908	TestNo: E6010		Analysis Date: 7/21/2005				SeqNo: 342689			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		101.1	2.00	100	0	101	90	110	0	0		
Barium		48.86	1.00	50	0	97.7	90	110	0	0		
Cadmium		4.93	0.100	5	0	98.6	90	110	0	0		
Chromium		24.94	0.500	25	0	99.8	90	110	0	0		
Lead		99.71	2.00	100	0	99.7	90	110	0	0		
Selenium		101.1	2.00	100	0	101	90	110	0	0		
Silver		52.6	2.00	50	0	105	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 3 of 16

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507080
Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050721C		
Client ID:	ZZZZZ	Batch ID:	13908	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342850		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	50.64	1.00	50	0	101	90	110	0	0					
Chromium	25.35	0.500	25	0	101	90	110	0	0					

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050721C		
Client ID:	ZZZZZ	Batch ID:	13908	TestNo:	E6010			AnalysisDate:	7/21/2005	SeqNo:	342676		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	98.77	2.00	100	0	98.8	90	110	0	0					
Barium	50.5	1.00	50	0	101	90	110	0	0					
Cadmium	5	0.100	5	0	100	90	110	0	0					
Chromium	25.26	0.500	25	0	101	90	110	0	0					
Lead	101.5	2.00	100	0	102	90	110	0	0					
Selenium	99.36	2.00	100	0	99.4	90	110	0	0					
Silver	52.69	2.00	50	0	105	90	110	0	0					

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050721C		
Client ID:	ZZZZZ	Batch ID:	13908	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342843		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	50.43	1.00	50	0	101	90	110	0	0					
Chromium	25.1	0.500	25	0	100	90	110	0	0					

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 4 of 16

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507080
 Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	MBLK-13956	SampType:	MBLK	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	7/27/2005	Run ID:	TJAIRIS_050728A	
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343881	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP		ND	0.0200									

Sample ID	LCS-13956	SampType:	LCS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	7/27/2005	Run ID:	TJAIRIS_050728A	
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343882	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP		1.02	0.0200	1	0	102	93.1	112	0	0		

Sample ID:	A0507110-01AMS	SampType:	MS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	7/27/2005	Run ID:	TJAIRIS_050728A	
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343885	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP		1.103	0.0200	1	0	110	91.9	112	0	0		

Sample ID	A0507110-01AMSD	SampType:	MSD	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	7/27/2005	Run ID:	TJAIRIS_050728A	
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343886	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP		1.084	0.0200	1	0	108	91.9	112	1.103	1.74	20	

Sample ID	A0507110-01ADUP	SampType:	DUP	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	7/27/2005	Run ID:	TJAIRIS_050728A	
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343884	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP		ND	0.0200	0	0	0	0	0	0	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050728A	
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343888	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507080
Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050728A			
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343888			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead, TCLP		1.033		0.0200	1	0		103	90	110	0		0	
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Sample ID	ICV	SampType:	ICV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050728A		
Client ID:	ZZZZZ	Batch ID:	13956	TestNo:	E1311/6010/7			Analysis Date:	7/28/2005	SeqNo:	343880		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead, TCLP		1.059		0.0200	1	0		106	90	110	0		0	
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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 16

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507080
 Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/22/2005	SeqNo:	342732
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10.0									
1,1,1-Trichloroethane	ND	10.0									
1,1,2,2-Tetrachloroethane	ND	10.0									
1,1,2-Trichloroethane	ND	10.0									
1,1-Dichloroethane	ND	10.0									
1,1-Dichloroethene	ND	10.0									
1,1-Dichloropropene	ND	10.0									
1,2,3-Trichlorobenzene	ND	10.0									
1,2,3-Trichloropropane	ND	10.0									
1,2,4-Trichlorobenzene	ND	10.0									
1,2,4-Trimethylbenzene	ND	10.0									
1,2-Dibromo-3-chloropropane	ND	10.0									
1,2-Dibromoethane	ND	10.0									
1,2-Dichlorobenzene	ND	10.0									
1,2-Dichloroethane	ND	10.0									
1,2-Dichloropropane	ND	10.0									
1,3,5-Trimethylbenzene	ND	10.0									
1,3-Dichlorobenzene	ND	10.0									
1,3-Dichloropropane	ND	10.0									
1,4-Dichlorobenzene	ND	10.0									
2,2-Dichloropropane	ND	10.0									
2-Butanone	ND	20.0									
2-Chlorotoluene	ND	10.0									
2-Hexanone	ND	20.0									
4-Chlorotoluene	ND	10.0									
4-Isopropyltoluene	ND	10.0									
4-Methyl-2-pentanone	ND	20.0									
Acetone	ND	50.0									
Benzene	ND	10.0									
Bromobenzene	ND	10.0									
Bromochloromethane	ND	10.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507080
Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/22/2005	SeqNo:	342732
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	10.0									
Bromoform	ND	10.0									
Bromomethane	ND	10.0									
Carbondisulfide	ND	10.0									
Carbon tetrachloride	ND	10.0									
Chlorobenzene	ND	10.0									
Chloroethane	ND	10.0									
Chloroform	ND	10.0									
Chloromethane	ND	10.0									
cis-1,2-Dichloroethene	ND	10.0									
cis-1,3-Dichloropropene	ND	10.0									
Dibromochloromethane	ND	10.0									
Dibromomethane	ND	10.0									
Dichlorodifluoromethane	ND	10.0									
Ethylbenzene	ND	10.0									
Hexachlorobutadiene	ND	10.0									
Isopropylbenzene	ND	10.0									
m,p-Xylene	ND	20.0									
Methyl tert-butyl ether	ND	10.0									
Methylene chloride	ND	50.0									
n-Butylbenzene	ND	10.0									
n-Propylbenzene	ND	10.0									
Naphthalene	ND	10.0									
o-Xylene	ND	10.0									
sec-Butylbenzene	ND	10.0									
Styrene	ND	10.0									
tert-Butylbenzene	ND	10.0									
Tetrachloroethene	ND	10.0									
Toluene	ND	10.0									
trans-1,2-Dichloroethene	ND	10.0									
trans-1,3-Dichloropropene	ND	10.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 8 of 16

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507080
 Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			AnalysisDate:	7/22/2005	SeqNo:	342732
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene	ND	10.0									
Trichlorofluoromethane	ND	10.0									
Vinyl chloride	ND	10.0									
Surr:1,2-Dichloroethane-d4	76.53	0	100	0	76.5	71.5	112	0	0		
Surr:4-Bromofluorobenzene	86.24	0	100	0	86.2	75.7	122	0	0		
Surr:Dibromofluoromethane	78.31	0	100	0	78.3	64.3	124	0	0		
Surr:Toluene-d8	89.2	0	100	0	89.2	74.9	120	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			AnalysisDate:	7/22/2005	SeqNo:	342731
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	68.2	10.0	80	0	85.2	65.4	133	0	0		
Benzene	68.66	10.0	80	0	85.8	78	123	0	0		
Chlorobenzene	66.06	10.0	80	0	82.6	79.5	125	0	0		
Toluene	70.06	10.0	80	0	87.6	77.5	132	0	0		
Trichloroethene	71.75	10.0	80	0	89.7	72.4	124	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			AnalysisDate:	7/26/2005	SeqNo:	343195
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	100	10.0	80	0	0	65.4	133	0	0		
Benzene	86.46	10.0	80	0	0	78	123	0	0		
Chlorobenzene	78.45	10.0	80	0	0	79.5	125	0	0		
Toluene	87.25	10.0	80	0	0	77.5	132	0	0		
Trichloroethene	93.22	10.0	80	0	0	72.4	124	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507080
 Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	LCSD	SampType:	LCSD	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A		
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/22/2005	SeqNo:	342747		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	61.96	10.0	80	0	77.4	65.4	133	68.2	9.59	20			
Benzene	66.84	10.0	80	0	83.6	78	123	68.66	2.69	20			
Chlorobenzene	68.11	10.0	80	0	85.1	79.5	125	66.06	3.06	20			
Toluene	70.06	10.0	80	0	87.6	77.5	132	70.06	0	20			
Trichloroethene	71.02	10.0	80	0	88.8	72.4	124	71.75	1.02	20			

Sample ID	0507080-01BMS	SampType:	MS	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A			
Client ID:	P1	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/22/2005	SeqNo:	342745			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	20.77	10.0	40	0	51.9	69.2	158	0	0				SCN
Benzene	17.08	10.0	40	0	42.7	71.7	147	0	0				SCN
Chlorobenzene	10.56	10.0	40	0	26.4	85.6	148	0	0				SCN
Toluene	14.92	10.0	40	0	37.3	75.8	153	0	0				SCN
Trichloroethene	12.17	10.0	40	0	30.4	77.1	138	0	0				SCN

Sample ID	0507080-01BMSD	SampType:	MSD	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A			
Client ID:	P1	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/22/2005	SeqNo:	342746			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	15.67	10.0	40	0	39.2	69.2	158	20.77	28.0	20	SR,CN
Benzene	13.08	10.0	40	0	32.7	71.7	147	17.08	26.5	20	SR,CN
Chlorobenzene	4.61	10.0	40	0	11.5	85.6	148	10.56	0	20	JS,CN
Toluene	8.02	10.0	40	0	20.1	75.8	153	14.92	0	20	JS,CN
Trichloroethene	6.78	10.0	40	0	17	77.1	138	12.17	0	20	JS,CN

Sample ID	CCV	SampType:	CCV	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A		
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/22/2005	SeqNo:	342730		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	33.36	10.0	40	0	83.4	80	120	0	0				
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507080
 Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	CCV	SampType:	CCV	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/22/2005	SeqNo:	342730
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	32.24	10.0	40	0	80.6	80	120	0	0		
Chloroform	34.01	10.0	40	0	85	80	120	0	0		
Ethylbenzene	32.7	10.0	40	0	81.8	80	120	0	0		
Toluene	33.96	10.0	40	0	84.9	80	120	0	0		
Vinyl chloride	43.45	10.0	40	0	109	80	120	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973L_050722A
Client ID:	ZZZZZ	Batch ID:	13915	TestNo:	SW8260B			Analysis Date:	7/26/2005	SeqNo:	343194
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	45.67	10.0	40	0	114	80	120	0	0		
1,2-Dichloropropane	38.99	10.0	40	0	97.5	80	120	0	0		
Chloroform	38.6	10.0	40	0	96.5	80	120	0	0		
Ethylbenzene	35.62	10.0	40	0	89	80	120	0	0		
Toluene	37.69	10.0	40	0	94.2	80	120	0	0		
Vinyl chloride	35.61	10.0	40	0	89	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 11 of 16

CLIENT: Maul, Foster & Alongi
Work Order: 0507080
Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HCID_NW

Sample ID	MB-13910	SampType:	MBLK	TestCode:	HCID_NW	Units:	mg/Kg	Prep Date:	7/21/2005	Run ID:	GC-M_050721A
Client ID:	ZZZZZ	Batch ID:	13910	TestNo:	NWHCID			Analysis Date:	7/21/2005	SeqNo:	342646
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	20.0									
Kerosene	ND	50.0									
Diesel	ND	50.0									
Lube Oil	ND	100									
Surr: BFB	89.4	0	100	0	89.4	50	150	0	0		
Surr: o-Terphenyl	92.7	0	100	0	92.7	50	150	0	0		

Sample ID	0507080-01ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	7/21/2005	Run ID:	GC-M_050721A
Client ID:	P1	Batch ID:	13910	TestNo:	NWHCID			Analysis Date:	7/21/2005	SeqNo:	342645
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.6	0	0	0	0	0	0	0	20	
Mineral Spirits	ND	20.6	0	0	0	0	0	0	0	20	
Kerosene	ND	51.5	0	0	0	0	0	0	0	20	
Diesel	ND	51.5	0	0	0	0	0	0	0	20	
Lube Oil	393.9	103	0	0	0	0	0	328.6	18.1	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507080
 Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_CTS

Sample ID	MB-13924	SampType:	MBLK	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	CVAA_050722A	
Client ID:	ZZZZZ	Batch ID:	13924	TestNo:	SW7471			Analysis Date:	7/22/2005	SeqNo:	342840	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	0.0167									

Sample ID	LCS-13924	SampType:	LCS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	CVAA_050722A	
Client ID:	ZZZZZ	Batch ID:	13924	TestNo:	SW7471			Analysis Date:	7/22/2005	SeqNo:	342839	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2219	0.0167	0.208	0	107	88.2	113	0	0		

Sample ID	0507080-01BMS	SampType:	MS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	CVAA_050722A	
Client ID:	P1	Batch ID:	13924	TestNo:	SW7471			Analysis Date:	7/22/2005	SeqNo:	342823	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2376	0.0147	0.1835	0.04841	103	78.1	125	0	0		

Sample ID	0507080-01BMSD	SampType:	MSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	CVAA_050722A	
Client ID:	P1	Batch ID:	13924	TestNo:	SW7471			Analysis Date:	7/22/2005	SeqNo:	342824	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2102	0.0143	0.1783	0.04841	90.8	78.1	125	0.2376	12.2	20	

Sample ID	0507080-01BDUP	SampType:	DUP	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	CVAA_050722A	
Client ID:	P1	Batch ID:	13924	TestNo:	SW7471			Analysis Date:	7/22/2005	SeqNo:	342822	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.04824	0.0143	0	0	0	0	0	0.04841	0.355	20	

Sample ID	CCV	SampType:	CCV	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:		Run ID:	CVAA_050722A	
Client ID:	ZZZZZ	Batch ID:	13924	TestNo:	SW7471			Analysis Date:	7/22/2005	SeqNo:	342838	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507080
Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_CTS

Sample ID	CCV	SampType:	CCV	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:		Run ID:	CVAA_050722A	
Client ID:	ZZZZZ	Batch ID:	13924	TestNo:	SW7471			Analysis Date:	7/22/2005	SeqNo:	342838	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2265	0.0167	0.208	0	109	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 14 of 16

CLIENT: Maul, Foster & Alongi
 Work Order: 0507080
 Project: AAC Scraping / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	MB-13919	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	GC-M_050723A	
Client ID:	ZZZZZ	Batch ID:	13919	TestNo:	NWTPH-Dx			Analysis Date:	7/23/2005	SeqNo:	342965	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND	15.0									
Lube Oil		12.13	50.0									J
Surr:o-Terphenyl		30.5	0	33.33	0	91.5	50	150	0	0		

Sample ID	LCS-13919	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	GC-M_050723A	
Client ID:	ZZZZZ	Batch ID:	13919	TestNo:	NWTPH-Dx			Analysis Date:	7/23/2005	SeqNo:	342964	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		171.7	15.0	167	0	103	76.3	122	0	0		
Lube Oil		198.6	50.0	167	12.13	112	69.9	127	0	0		

Sample ID	0507080-01ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	7/22/2005	Run ID:	GC-M_050723A	
Client ID:	P1	Batch ID:	13919	TestNo:	NWTPH-Dx			Analysis Date:	7/23/2005	SeqNo:	342958	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		125.3	15.4	0	0	0	0	0	135	7.51	20	K
Lube Oil		593.8	51.5	0	0	0	0	0	629.3	5.80	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050723A	
Client ID:	ZZZZZ	Batch ID:	13919	TestNo:	NWTPH-Dx			Analysis Date:	7/23/2005	SeqNo:	342966	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		331.6	15.0	333.7	0	99.4	85	115	0	0		
Lube Oil		176.2	50.0	166.8	0	106	85	115	0	0		

Sample ID	CCV-2	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050723A	
Client ID:	ZZZZZ	Batch ID:	13919	TestNo:	NWTPH-Dx			Analysis Date:	7/23/2005	SeqNo:	342967	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		620.5	15.0	667.3	0	93	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507080
Project: AAC Scraping/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	CCV-2	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050723A	
Client ID:	ZZZZZ	Batch ID:	13919	TestNo:	NWTPH-Dx			Analysis Date:	7/23/2005	SeqNo.:	342967	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil		362.5	50.0	333.7	0	109	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

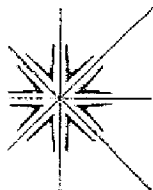
B - Analyte detected in the associated Method Blank

Page 16 of 16

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page 1 of 1



19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager ANNA ST JOHN
Company MAUL FOSTER & ALONGI
Address 3121 SW MOODY AVE, STE 200
PORTLAND OR 97239
Phone 971.544.2139 Fax 971.544.2140
Project No. 0100-01-02 Project Name AAC SCRAPING
Invoice To SCOTT BURGESS; AAC P.O. No. _____

Signature _____

Printed _____

Signature _____

Printed ANNA ST JE HIN

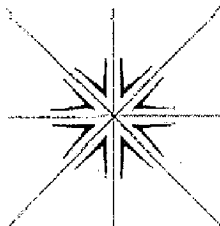
☐ Normal☒ Rush

5- DAY

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

[illegible]



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

August 08, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACC / 0100.01.02

Dear Anna St. John:

Order No.: 0508012

Specialty Analytical received 1 sample on 8/2/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 08-Aug-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.02

Lab Order: 0508012

Lab ID: 0508012-01

Collection Date: 8/2/2005 11:30:00 AM

Client Sample ID: P2-080205

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HCID						
				NWHCID		
				Analyst: das		
Gasoline	ND	20.6		mg/Kg-dry	1	8/2/2005
Mineral Spirits	ND	20.6		mg/Kg-dry	1	8/2/2005
Kerosene	ND	51.5		mg/Kg-dry	1	8/2/2005
Diesel	ND	51.5		mg/Kg-dry	1	8/2/2005
Lube Oil	139	103		mg/Kg-dry	1	8/2/2005
Surr: BFB	97.3	50-150		%REC	1	8/2/2005
Surr: o-Terphenyl	97.7	50-150		%REC	1	8/2/2005
NWTPH-DX						
				NWTPH-DX		
				Analyst: das		
Diesel	ND	15.5	A3	mg/Kg-dry	1	8/4/2005
Lube Oil	401	51.5		mg/Kg-dry	1	8/4/2005
Surr: o-Terphenyl	129	50-150		%REC	1	8/4/2005
TOTAL METALS BY ICP						
				E6010		
				Analyst: zau		
Arsenic	4.17	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
Barium	98.7	1.82		mg/Kg	2	8/3/2005 3:05:56 PM
Cadmium	0.727	0.0909		mg/Kg	1	8/3/2005 1:34:27 PM
Chromium	36.4	0.455		mg/Kg	1	8/3/2005 1:34:27 PM
Lead	135	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
Selenium	ND	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
Silver	ND	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
TCLP METALS						
				E1311/6010/7470		
				Analyst: zau		
Arsenic, TCLP	ND	0.100		mg/L	1	8/3/2005 5:04:10 PM
Barium, TCLP	2.50	0.250		mg/L	5	8/4/2005 1:54:07 PM
Cadmium, TCLP	0.00650	0.00500		mg/L	1	8/3/2005 5:04:10 PM
Chromium, TCLP	0.0380	0.0250		mg/L	1	8/3/2005 5:04:10 PM
Lead, TCLP	ND	0.100		mg/L	1	8/3/2005 5:04:10 PM
Selenium, TCLP	ND	0.100		mg/L	1	8/3/2005 5:04:10 PM
Silver, TCLP	ND	0.0500		mg/L	1	8/3/2005 5:04:10 PM
MERCURY, TOTAL						
				SW7471		
				Analyst: zau		
Mercury	0.0856	0.0132		mg/Kg	1	8/3/2005
TCLP MERCURY						
				1311/7000		
				Analyst: zau		
Mercury, TCLP	ND	0.000100		mg/L	1	8/3/2005

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13989	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A
Client ID:	ZZZZZ	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344983
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	2.00									
Barium	ND	1.00									
Cadmium	ND	0.100									
Chromium	ND	0.500									
Lead	ND	2.00									
Selenium	ND	2.00									
Silver	ND	2.00									

Sample ID	LCS-13989	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A
Client ID:	ZZZZZ	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344984
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	99.19	2.00	100	0	99.2	85.1	107	0	0		
Barium	49.07	1.00	50	0	98.1	85.7	110	0	0		
Cadmium	4.96	0.100	5	0	99.2	87.2	109	0	0		
Chromium	25.29	0.500	25	0	101	84	113	0	0		
Lead	96.17	2.00	100	0	96.2	84.9	109	0	0		
Selenium	100.6	2.00	100	0	101	88.7	111	0	0		
Silver	49.35	2.00	50	0	98.7	79.3	109	0	0		

Sample ID	0508012-01BMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A
Client ID:	P2-080205	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344987
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	92.36	1.85	92.59	4.173	95.2	86.1	109	0	0		
Cadmium	5.343	0.0926	4.63	0.7273	99.7	86.4	113	0	0		
Lead	169	1.85	92.59	134.9	36.8	84.9	109	0	0		S/RP
Selenium	81.37	1.85	92.59	0	87.9	77.7	116	0	0		
Silver	44.76	1.85	46.3	0	96.7	75	123	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0508012-01BMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A
Client ID:	P2-080205	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344994
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	138	1.85	46.3	98.75	84.8	75	125	0	0		
Chromium	54.59	0.926	23.15	38.2	70.8	75	121	0	0		S

Sample ID	0508012-01BMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A
Client ID:	P2-080205	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344988
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	93.61	1.85	92.59	4.173	96.6	86.1	109	92.36	1.34	20	
Cadmium	5.296	0.0926	4.63	0.7273	98.7	86.4	113	5.343	0.870	20	
Lead	173.6	1.85	92.59	134.9	41.8	84.9	109	169	2.70	20	S,RP
Selenium	81.67	1.85	92.59	0	88.2	77.7	116	81.37	0.363	20	
Silver	45.16	1.85	46.3	0	97.5	75	123	44.76	0.886	20	

Sample ID	0508012-01BMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A
Client ID:	P2-080205	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344995
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	145	1.85	46.3	98.75	99.8	75	125	138	4.92	20	
Chromium	62.94	0.926	23.15	38.2	107	75	121	54.59	14.2	20	

Sample ID	0508012-01BDUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A
Client ID:	P2-080205	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344986
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	9.519	1.85	0	0	0	0	0	4.173	78.1	20	RF
Cadmium	0.8796	0.0926	0	0	0	0	0	0.7273	19.0	20	
Chromium	40.37	0.463	0	0	0	0	0	36.38	10.4	20	
Lead	125.3	1.85	0	0	0	0	0	134.9	7.40	20	
Selenium	ND	1.85	0	0	0	0	0	0	0	20	
Silver	ND	1.85	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0508012-01BDUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	TJAIRIS_050803A	
Client ID:	P2-080205	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344993	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	107.6	1.85	0	0	0	0	0	0	98.75	8.61	20	
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050803A	
Client ID:	ZZZZZ	Batch ID:	13989	TestNo:	E6010			AnalysisDate:	8/3/2005	SeqNo:	344991	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	98.38	2.00	100	0	98.4	90	110	0	0			
Barium	48.24	1.00	50	0	96.5	90	110	0	0			
Cadmium	5.07	0.100	5	0	101	90	110	0	0			
Chromium	25.01	0.500	25	0	100	90	110	0	0			
Lead	96.95	2.00	100	0	97	90	110	0	0			
Selenium	100.9	2.00	100	0	101	90	110	0	0			
Silver	49.22	2.00	50	0	98.4	90	110	0	0			

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050803A	
Client ID:	ZZZZZ	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344996	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	99.57	2.00	100	0	99.6	90	110	0	0			
Barium	48.2	1.00	50	0	96.4	90	110	0	0			
Cadmium	5.14	0.100	5	0	103	90	110	0	0			
Chromium	25.23	0.500	25	0	101	90	110	0	0			
Lead	98.47	2.00	100	0	98.5	90	110	0	0			
Selenium	99.93	2.00	100	0	99.9	90	110	0	0			
Silver	49.35	2.00	50	0	98.7	90	110	0	0			

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050803A	
Client ID:	ZZZZZ	Batch ID:	13989	TestNo:	E6010			Analysis Date:	8/3/2005	SeqNo:	344982	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	97.53	2.00	100	0	97.5	90	110	0	0			
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508012
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050803A					
Client ID: ZZZZZ	Batch ID: 13989	TestNo: E6010	Analysis Date: 8/3/2005	SeqNo: 344982							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	49.37	1.00	50	0	98.7	90	110	0	0		
Cadmium	4.91	0.100	5	0	98.2	90	110	0	0		
Chromium	25.18	0.500	25	0	101	90	110	0	0		
Lead	98.3	2.00	100	0	98.3	90	110	0	0		
Selenium	98.57	2.00	100	0	98.6	90	110	0	0		
Silver	49.43	2.00	50	0	98.9	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 4 of 15

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	MBLK-13996	SampType:	MBLK	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B
Client ID:	ZZZZZ	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345133
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	ND	0.0200									
Barium, TCLP	ND	0.0100									
Cadmium, TCLP	ND	0.00100									
Chromium, TCLP	ND	0.00500									
Lead, TCLP	ND	0.0200									
Selenium, TCLP	ND	0.0200									
Silver, TCLP	ND	0.0100									

Sample ID	LCS-13996	SampType:	LCS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B
Client ID:	ZZZZZ	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345134
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.009	0.0200	1	0	101	93.8	107	0	0		
Barium, TCLP	0.4893	0.0100	0.5	0	97.9	95	111	0	0		
Cadmium, TCLP	0.0503	0.00100	0.05	0	101	91.8	110	0	0		
Chromium, TCLP	0.2505	0.00500	0.25	0	100	93.6	113	0	0		
Lead, TCLP	1.016	0.0200	1	0	102	93.1	112	0	0		
Selenium, TCLP	1.019	0.0200	1	0	102	93.9	111	0	0		
Silver, TCLP	0.4852	0.0100	0.5	0	97	90.6	115	0	0		

Sample ID	0508012-01BMS	SampType:	MS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B
Client ID:	P2-080205	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345137
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	5.07	0.100	5	0	101	90.1	110	0	0		
Cadmium, TCLP	0.263	0.00500	0.25	0.0065	103	93.4	110	0	0		
Chromium, TCLP	1.251	0.0250	1.25	0.038	97	93.4	112	0	0		
Lead, TCLP	5.185	0.100	5	0	104	91.9	112	0	0		
Selenium, TCLP	5.16	0.100	5	0	103	93.5	113	0	0		
Silver, TCLP	2.45	0.0500	2.5	0	98	90.1	113	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508012
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	0508012-01BMS	SampType:	MS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B
Client ID:	P2-080205	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/4/2005	SeqNo:	345325
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium, TCLP	5.44	0.250	2.5	2.498	118	90.7	112	0	0		S
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Sample ID	0508012-01BMSD	SampType:	MSD	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B
Client ID:	P2-080205	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345138
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	5.205	0.100	5	0	104	90.1	110	5.07	2.63	20	
Cadmium, TCLP	0.265	0.00500	0.25	0.0065	103	93.4	110	0.263	0.758	20	
Chromium, TCLP	1.279	0.0250	1.25	0.038	99.3	93.4	112	1.251	2.21	20	
Lead, TCLP	5.245	0.100	5	0	105	91.9	112	5.185	1.15	20	
Selenium, TCLP	5.21	0.100	5	0	104	93.5	113	5.16	0.964	20	
Silver, TCLP	2.304	0.0500	2.5	0	92.1	90.1	113	2.45	6.14	20	

Sample ID	0508012-01BMSD	SampType:	MSD	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B
Client ID:	P2-080205	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/4/2005	SeqNo:	345326
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium, TCLP	5.398	0.250	2.5	2.498	116	90.7	112	5.44	0.784	20	S
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Sample ID	0508012-01BDUP	SampType:	DUP	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B
Client ID:	P2-080205	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345136
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	ND	0.100	0	0	0	0	0	0	0	20	
Cadmium, TCLP	ND	0.00500	0	0	0	0	0	0.0065	0	20	
Chromium, TCLP	0.04	0.0250	0	0	0	0	0	0.038	5.13	20	
Lead, TCLP	ND	0.100	0	0	0	0	0	0	0	20	
Selenium, TCLP	ND	0.100	0	0	0	0	0	0	0	20	
Silver, TCLP	ND	0.0500	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 15

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508012
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	0508012-01BDUP	SampType:	DUP	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	TJAIRIS_050803B	
Client ID:	P2-080205	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/4/2005	SeqNo:	345324	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium, TCLP	2.405	0.250	0	0	0	0	0	0	2.498	3.77	20
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050803B	
Client ID:	ZZZZZ	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345132	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.009	0.0200	1	0	101	90	110	0	0
Barium, TCLP	0.4802	0.0100	0.5	0	96	90	110	0	0
Cadmium, TCLP	0.0509	0.00100	0.05	0	102	90	110	0	0
Chromium, TCLP	0.2506	0.00500	0.25	0	100	90	110	0	0
Lead, TCLP	0.9944	0.0200	1	0	99.4	90	110	0	0
Selenium, TCLP	1.01	0.0200	1	0	101	90	110	0	0
Silver, TCLP	0.4919	0.0100	0.5	0	98.4	90	110	0	0

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050803B	
Client ID:	ZZZZZ	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345141	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.009	0.0200	1	0	101	90	110	0	0
Barium, TCLP	0.479	0.0100	0.5	0	95.8	90	110	0	0
Cadmium, TCLP	0.0503	0.00100	0.05	0	101	90	110	0	0
Chromium, TCLP	0.2527	0.00500	0.25	0	101	90	110	0	0
Lead, TCLP	0.9946	0.0200	1	0	99.5	90	110	0	0
Selenium, TCLP	1.014	0.0200	1	0	101	90	110	0	0
Silver, TCLP	0.4917	0.0100	0.5	0	98.3	90	110	0	0

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050803B	
Client ID:	ZZZZZ	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/4/2005	SeqNo:	345327	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium, TCLP	0.4972	0.0100	0.5	0	99.4	90	110	0	0
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Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	ICV	SampType:	ICV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050803B
Client ID:	ZZZZZ	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/3/2005	SeqNo:	345131
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	0.9753	0.0200	1	0	97.5	90	110	0	0		
Barium, TCLP	0.4937	0.0100	0.5	0	98.7	90	110	0	0		
Cadmium, TCLP	0.0491	0.00100	0.05	0	98.2	90	110	0	0		
Chromium, TCLP	0.2518	0.00500	0.25	0	101	90	110	0	0		
Lead, TCLP	0.983	0.0200	1	0	98.3	90	110	0	0		
Selenium, TCLP	0.9857	0.0200	1	0	98.6	90	110	0	0		
Silver, TCLP	0.4943	0.0100	0.5	0	98.9	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050803B
Client ID:	ZZZZZ	Batch ID:	13996	TestNo:	E1311/6010/7			Analysis Date:	8/4/2005	SeqNo:	345322
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	0.5031	0.0100	0.5	0	101	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 8 of 15

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HCID_NW

Sample ID	MB-13992	SampType:	MBLK	TestCode:	HCID_NW	Units:	mg/Kg	Prep Date:	8/2/2005	Run ID:	GC-M_050802A
Client ID:	ZZZZZ	Batch ID:	13992	TestNo:	NWHCID			Analysis Date:	8/2/2005	SeqNo:	344803
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	20.0									
Kerosene	ND	50.0									
Diesel	ND	50.0									
Lube Oil	ND	100									
Surr: BFB	98.3	0	100	0	98.3	50	150	0	0		
Surr: o-Terphenyl	99.4	0	100	0	99.4	50	150	0	0		

Sample ID	0508012-01ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	8/2/2005	Run ID:	GC-M_050802A
Client ID:	P2-080205	Batch ID:	13992	TestNo:	NWHCID			Analysis Date:	8/2/2005	SeqNo:	344802
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.6	0	0	0	0	0	0	0	20	
Mineral Spirits	ND	20.6	0	0	0	0	0	0	0	20	
Kerosene	ND	51.5	0	0	0	0	0	0	0	20	
Diesel	ND	51.5	0	0	0	0	0	0	0	20	
Lube Oil	150.9	103	0	0	0	0	0	138.6	8.47	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 9 of 15

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_CTS

Sample ID	MB-14006	SampType:	MBLK	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	8/3/2005	Run ID:	CVAA_050803C	
Client ID:	ZZZZZ	Batch ID:	14006	TestNo:	SW7471			Analysis Date:	8/3/2005	SeqNo:	345024	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND		0.0167								

Sample ID	LCS-14006	SampType:	LCS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	8/3/2005	Run ID:	CVAA_050803C	
Client ID:	ZZZZZ	Batch ID:	14006	TestNo:	SW7471			Analysis Date:	8/3/2005	SeqNo:	345023	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2022	0.0167	0.208	0	97.2	88.2	113	0	0		

Sample ID	0508012-01BMS	SampType:	MS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	8/3/2005	Run ID:	CVAA_050803C	
Client ID:	P2-080205	Batch ID:	14006	TestNo:	SW7471			Analysis Date:	8/3/2005	SeqNo:	345020	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2292	0.0132	0.1642	0.08559	87.5	78.1	125	0	0		

Sample ID	0508012-01BMSD	SampType:	MSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	8/3/2005	Run ID:	CVAA_050803C	
Client ID:	P2-080205	Batch ID:	14006	TestNo:	SW7471			Analysis Date:	8/3/2005	SeqNo:	345021	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2332	0.0132	0.1642	0.08559	89.9	78.1	125	0.2292	1.71	20	

Sample ID	0508012-01BDUP	SampType:	DUP	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	8/3/2005	Run ID:	CVAA_050803C	
Client ID:	P2-080205	Batch ID:	14006	TestNo:	SW7471			Analysis Date:	8/3/2005	SeqNo:	345019	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.06461	0.0135	0	0	0	0	0	0.08559	27.9	20	RF

Sample ID	CCV	SampType:	CCV	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:		Run ID:	CVAA_050803C	
Client ID:	ZZZZZ	Batch ID:	14006	TestNo:	SW7471			Analysis Date:	8/3/2005	SeqNo:	345022	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 10 of 15

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508012
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_CTS

Sample ID	CCV	SampType:	CCV	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:		Run ID:	CVAA_050803C		
Client ID:	ZZZZZ	Batch ID:	14006	TestNo:	SW7471			Analysis Date:	8/3/2005	SeqNo:	345022		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.2045		0.0167	0.208	0	98.3	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 11 of 15

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID	MB-14005	SampType:	MBLK	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	CVAA_050803A			
Client ID:	ZZZZZ	Batch ID:	14005	TestNo:	1311/7000			Analysis Date:	8/3/2005	SeqNo:	345005			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND		0.000100										

Sample ID	LCS-14005	SampType:	LCS	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	CVAA_050803A			
Client ID:	ZZZZZ	Batch ID:	14005	TestNo:	1311/7000			Analysis Date:	8/3/2005	SeqNo:	345004			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.003808		0.000100	0.004	0		95.2	85.4	116	0	0		

Sample ID	0508003-17AMS	SampType:	MS	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	CVAA_050803A			
Client ID:	ZZZZZ	Batch ID:	14005	TestNo:	1311/7000			Analysis Date:	8/3/2005	SeqNo:	345000			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, TCLP		0.004121		0.000100	0.004	0		103	69.5	125	0	0		

Sample ID	0508003-17AMSD	SampType:	MSD	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	CVAA_050803A			
Client ID:	ZZZZZ	Batch ID:	14005	TestNo:	1311/7000			Analysis Date:	8/3/2005	SeqNo:	345001			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, TCLP		0.004157		0.000100	0.004	0		104	69.5	125	0.004121	0.870	20	

Sample ID	0508003-17ADUP	SampType:	DUP	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/3/2005	Run ID:	CVAA_050803A			
Client ID:	ZZZZZ	Batch ID:	14005	TestNo:	1311/7000			Analysis Date:	8/3/2005	SeqNo:	344999			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, TCLP		ND		0.000100	0	0		0	0	0	0	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:		Run ID:	CVAA_050803A			
Client ID:	ZZZZZ	Batch ID:	14005	TestNo:	1311/7000			Analysis Date:	8/3/2005	SeqNo:	345007			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 12 of 15

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508012
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID	CCV	SampType:	CCV	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:		Run ID:	CVA_050803A	
Client ID:	ZZZZZ	Batch ID:	14005	TestNo:	1311/7000			Analysis Date:	8/3/2005	SeqNo:	345007	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		0.003999	0.000100	0.004	0	100	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 13 of 15

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508012
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	MB-14000	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	8/3/2005	Run ID:	GC-M_050804A	
Client ID:	ZZZZZ	Batch ID:	14000	TestNo:	NWTPH-Dx			Analysis Date:	8/4/2005	SeqNo:	345302	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		6.833	15.0									J
Lube Oil		16.67	50.0									J
Surr-to-Terphenyl		38.13	0	33.33	0	114	50	150	0	0		

Sample ID	LCS-14000	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	8/3/2005	Run ID:	GC-M_050804A	
Client ID:	ZZZZZ	Batch ID:	14000	TestNo:	NWTPH-Dx			Analysis Date:	8/4/2005	SeqNo:	345301	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		215.3	15.0	167	6.833	125	76.3	125	0	0		
Lube Oil		208.2	50.0	167	16.67	115	69.9	127	0	0		

Sample ID	0508012-01ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	8/3/2005	Run ID:	GC-M_050804A	
Client ID:	P2-080205	Batch ID:	14000	TestNo:	NWTPH-Dx			Analysis Date:	8/4/2005	SeqNo:	345300	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND	15.5	0	0	0	0	0	0	0	20	A3
Lube Oil		404.1	51.5	0	0	0	0	0	401.4	0.665	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050804A	
Client ID:	ZZZZZ	Batch ID:	14000	TestNo:	NWTPH-Dx			Analysis Date:	8/4/2005	SeqNo:	345303	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		346.1	15.0	335.5	0	103	85	115	0	0		
Lube Oil		321.8	50.0	332.1	0	96.9	85	115	0	0		

Sample ID	CCV-2	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050804A	
Client ID:	ZZZZZ	Batch ID:	14000	TestNo:	NWTPH-Dx			Analysis Date:	8/4/2005	SeqNo:	345304	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		616.3	15.0	670.9	0	91.9	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 14 of 15

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508012
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	CCV-2	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050804A		
Client ID:	ZZZZZ	Batch ID:	14000	TestNo:	NWTPH-Dx			Analysis Date:	8/4/2005	SeqNo:	345304		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil		275.6		50.0	249	0	111	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

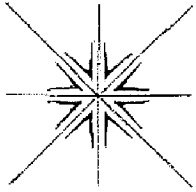
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 15 of 15

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page 1 of 1

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Signature _____

Printed.

Signature_____

Printed.

☐ Normal

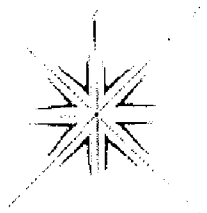
BLRush

Specificity

Rush Analyses Must Be Scheduled With The Lab In Advance

P.O. No. _____

[illegible]



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
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1 (877) 612-9007

August 23, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201
TEL: (971) 544-2139
FAX (971) 544-2140

RE: AACP / 0100.01.02

Dear Anna St. John:

Order No.: 0508078

Specialty Analytical received 2 samples on 8/18/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 23-Aug-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0508078

Lab ID: 0508078-01

Collection Date: 8/18/2005 9:45:00 AM

Client Sample ID: P3-081805

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HCID						
		NWHCID				Analyst: das
Gasoline	ND	21.6		mg/Kg-dry	1	8/18/2005
Mineral Spirits	ND	21.6		mg/Kg-dry	1	8/18/2005
Kerosene	ND	53.9		mg/Kg-dry	1	8/18/2005
Diesel	ND	53.9		mg/Kg-dry	1	8/18/2005
Lube Oil	Lube Oil	108		mg/Kg-dry	1	8/18/2005
Surr: BFB	83.5	50-150		%REC	1	8/18/2005
Surr: o-Terphenyl	96.6	50-150		%REC	1	8/18/2005
NWTPH-DX						
		NWTPH-DX				Analyst: das
Diesel	ND	16.2	A3	mg/Kg-dry	1	8/18/2005
Lube Oil	395	53.9	A2	mg/Kg-dry	1	8/18/2005
Surr: o-Terphenyl	105	50-150		%REC	1	8/18/2005
TCLP METALS						
		E1311/6010/7470				Analyst: zau
Arsenic, TCLP	ND	0.100		mg/L	1	8/19/2005 2:36:55 PM
Barium, TCLP	3.42	0.250		mg/L	5	8/19/2005 2:47:36 PM
Cadmium, TCLP	0.00750	0.00500		mg/L	1	8/19/2005 2:36:55 PM
Chromium, TCLP	ND	0.0250		mg/L	1	8/19/2005 2:36:55 PM
Lead, TCLP	ND	0.100		mg/L	1	8/19/2005 2:36:55 PM
Selenium, TCLP	ND	0.100		mg/L	1	8/19/2005 2:36:55 PM
Silver, TCLP	ND	0.0500		mg/L	1	8/19/2005 2:36:55 PM
TCLP MERCURY						
		1311/7000				Analyst: zau
Mercury, TCLP	ND	0.000100		mg/L	1	8/19/2005

Specialty Analytical

Date: 23-Aug-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0508078

Lab ID: 0508078-02

Collection Date: 8/18/2005 9:50:00 AM

Client Sample ID: P4-081805

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
						Analyst: das
NWTPH-HCID						
		NWHCID				
Gasoline	ND	20.8		mg/Kg-dry	1	8/18/2005
Mineral Spirits	ND	20.8		mg/Kg-dry	1	8/18/2005
Kerosene	ND	52.1		mg/Kg-dry	1	8/18/2005
Diesel	ND	52.1		mg/Kg-dry	1	8/18/2005
Lube Oil	Lube Oil	104		mg/Kg-dry	1	8/18/2005
Surr: BFB	81.9	50-150		%REC	1	8/18/2005
Surr: o-Terphenyl	94.4	50-150		%REC	1	8/18/2005
						Analyst: das
NWTPH-DX						
		NWTPH-DX				
Diesel	ND	15.6	A3	mg/Kg-dry	1	8/18/2005
Lube Oil	326	52.1	A2	mg/Kg-dry	1	8/18/2005
Surr: o-Terphenyl	111	50-150		%REC	1	8/18/2005
						Analyst: zau
TCLP METALS						
		E1311/6010/7470				
Arsenic, TCLP	ND	0.100		mg/L	1	8/19/2005 2:42:15 PM
Barium, TCLP	2.83	0.250		mg/L	5	8/19/2005 2:52:59 PM
Cadmium, TCLP	0.00550	0.00500		mg/L	1	8/19/2005 2:42:15 PM
Chromium, TCLP	ND	0.0250		mg/L	1	8/19/2005 2:42:15 PM
Lead, TCLP	ND	0.100		mg/L	1	8/19/2005 2:42:15 PM
Selenium, TCLP	ND	0.100		mg/L	1	8/19/2005 2:42:15 PM
Silver, TCLP	ND	0.0500		mg/L	1	8/19/2005 2:42:15 PM
						Analyst: zau
TCLP MERCURY						
		1311/7000				
Mercury, TCLP	ND	0.000100		mg/L	1	8/19/2005

CLIENT: Maul, Foster & Alongi

Work Order: 0508078

Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	MBLK-14099	SampType:	MBLK	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348374
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	0.0139	0.0200									J
Barium, TCLP	ND	0.0100									
Cadmium, TCLP	ND	0.00100									
Chromium, TCLP	ND	0.00500									
Lead, TCLP	ND	0.0200									
Selenium, TCLP	ND	0.0200									
Silver, TCLP	ND	0.0100									

Sample ID	LCS-14099	SampType:	LCS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348375
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.054	0.0200	1	0.0139	104	93.8	107	0	0		
Barium, TCLP	0.5107	0.0100	0.5	0	102	95	111	0	0		
Cadmium, TCLP	0.0506	0.00100	0.05	0	101	91.8	110	0	0		
Chromium, TCLP	0.2616	0.00500	0.25	0	105	93.6	113	0	0		
Lead, TCLP	1.05	0.0200	1	0	105	93.1	112	0	0		
Selenium, TCLP	1.042	0.0200	1	0	104	93.9	111	0	0		
Silver, TCLP	0.4877	0.0100	0.5	0	97.5	90.6	115	0	0		

Sample ID	0508078-01BMS	SampType:	MS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	TJAIRIS_050819A
Client ID:	P3-081805	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348372
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	5.425	0.100	5	0	108	90.1	110	0	0		
Cadmium, TCLP	0.271	0.00500	0.25	0.0075	105	93.4	110	0	0		
Chromium, TCLP	1.316	0.0250	1.25	0.0405	102	93.4	112	0	0		
Lead, TCLP	5.355	0.100	5	0	107	91.9	112	0	0		
Selenium, TCLP	5.425	0.100	5	0	108	93.5	113	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508078
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	0508078-01BMS	SampType: MS	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 8/19/2005	Run ID: TJAIRIS_050819A					
Client ID:	P3-081805	Batch ID: 14099	TestNo: E1311/6010/7		Analysis Date: 8/19/2005	SeqNo: 348372					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver, TCLP	2.51	0.0500	2.5	0	100	90.1	113	0	0		

Sample ID	0508078-01BMS	SampType: MS	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 8/19/2005	Run ID: TJAIRIS_050819A					
Client ID:	P3-081805	Batch ID: 14099	TestNo: E1311/6010/7		Analysis Date: 8/19/2005	SeqNo: 348381					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	6.065	0.250	2.5	3.422	106	90.7	112	0	0		

Sample ID	0508078-01BMSD	SampType: MSD	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 8/19/2005	Run ID: TJAIRIS_050819A					
Client ID:	P3-081805	Batch ID: 14099	TestNo: E1311/6010/7		Analysis Date: 8/19/2005	SeqNo: 348373					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	5.4	0.100	5	0	108	90.1	110	5.425	0.462	20	
Cadmium, TCLP	0.271	0.00500	0.25	0.0075	105	93.4	110	0.271	0	20	
Chromium, TCLP	1.327	0.0250	1.25	0.0405	103	93.4	112	1.316	0.757	20	
Lead, TCLP	5.305	0.100	5	0	106	91.9	112	5.355	0.938	20	
Selenium, TCLP	5.41	0.100	5	0	108	93.5	113	5.425	0.277	20	
Silver, TCLP	2.472	0.0500	2.5	0	98.9	90.1	113	2.51	1.53	20	

Sample ID	0508078-01BMSD	SampType: MSD	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 8/19/2005	Run ID: TJAIRIS_050819A					
Client ID:	P3-081805	Batch ID: 14099	TestNo: E1311/6010/7		Analysis Date: 8/19/2005	SeqNo: 348382					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	5.965	0.250	2.5	3.422	102	90.7	112	6.065	1.66	20	

Sample ID	0508078-01BDUP	SampType: DUP	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 8/19/2005	Run ID: TJAIRIS_050819A					
Client ID:	P3-081805	Batch ID: 14099	TestNo: E1311/6010/7		Analysis Date: 8/19/2005	SeqNo: 348370					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	ND	0.100	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 10

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508078
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	0508078-01BDUP	SampType:	DUP	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	TJAIRIS_050819A
Client ID:	P3-081805	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348370
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cadmium, TCLP	0.0105	0.00500	0	0	0	0	0	0.0075	33.3	20	RF
Chromium, TCLP	ND	0.0250	0	0	0	0	0	0	0	20	
Lead, TCLP	ND	0.100	0	0	0	0	0	0	0	20	
Selenium, TCLP	ND	0.100	0	0	0	0	0	0	0	20	
Silver, TCLP	ND	0.0500	0	0	0	0	0	0	0	20	

Sample ID	0508078-01BDUP	SampType:	DUP	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	TJAIRIS_050819A
Client ID:	P3-081805	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348380
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium, TCLP	3.705	0.250	0	0	0	0	0	3.422	7.93	20	
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348365
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.005	0.0200	1	0	101	90	110	0	0		
Barium, TCLP	0.5022	0.0100	0.5	0	100	90	110	0	0		
Cadmium, TCLP	0.0501	0.00100	0.05	0	100	90	110	0	0		
Chromium, TCLP	0.2555	0.00500	0.25	0	102	90	110	0	0		
Lead, TCLP	1.045	0.0200	1	0	104	90	110	0	0		
Selenium, TCLP	0.9899	0.0200	1	0	99	90	110	0	0		
Silver, TCLP	0.4794	0.0100	0.5	0	95.9	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348371
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.038	0.0200	1	0	104	90	110	0	0		
Barium, TCLP	0.5001	0.0100	0.5	0	100	90	110	0	0		
Cadmium, TCLP	0.0507	0.00100	0.05	0	101	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0508078
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348371
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, TCLP	0.2573	0.00500	0.25	0	103	90	110	0	0		
Lead, TCLP	1.03	0.0200	1	0	103	90	110	0	0		
Selenium, TCLP	1.018	0.0200	1	0	102	90	110	0	0		
Silver, TCLP	0.4899	0.0100	0.5	0	98	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348378
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.055	0.0200	1	0	106	90	110	0	0		
Barium, TCLP	0.5068	0.0100	0.5	0	101	90	110	0	0		
Cadmium, TCLP	0.0506	0.00100	0.05	0	101	90	110	0	0		
Chromium, TCLP	0.2565	0.00500	0.25	0	103	90	110	0	0		
Lead, TCLP	1.055	0.0200	1	0	106	90	110	0	0		
Selenium, TCLP	1.05	0.0200	1	0	105	90	110	0	0		
Silver, TCLP	0.4923	0.0100	0.5	0	98.5	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348379
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.071	0.0200	1	0	107	90	110	0	0		
Barium, TCLP	0.5377	0.0100	0.5	0	108	90	110	0	0		
Cadmium, TCLP	0.0487	0.00100	0.05	0	97.4	90	110	0	0		
Chromium, TCLP	0.2621	0.00500	0.25	0	105	90	110	0	0		
Lead, TCLP	1.084	0.0200	1	0	108	90	110	0	0		
Selenium, TCLP	1.029	0.0200	1	0	103	90	110	0	0		
Silver, TCLP	0.4998	0.0100	0.5	0	100	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0508078
 Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	CCV	SampType	CCV	TestCode	6010_TCLP	Units	mg/L	Prep Date:		Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348383
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.062	0.0200	1	0	106	90	110	0	0		
Barium, TCLP	0.5423	0.0100	0.5	0	108	90	110	0	0		
Cadmium, TCLP	0.0489	0.00100	0.05	0	97.8	90	110	0	0		
Chromium, TCLP	0.2619	0.00500	0.25	0	105	90	110	0	0		
Lead, TCLP	1.061	0.0200	1	0	106	90	110	0	0		
Selenium, TCLP	1.028	0.0200	1	0	103	90	110	0	0		
Silver, TCLP	0.5038	0.0100	0.5	0	101	90	110	0	0		

Sample ID	ICV	SampType	ICV	TestCode	6010_TCLP	Units	mg/L	Prep Date:		Run ID:	TJAIRIS_050819A
Client ID:	ZZZZZ	Batch ID:	14099	TestNo:	E1311/6010/7			Analysis Date:	8/19/2005	SeqNo:	348364
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	0.9932	0.0200	1	0	99.3	90	110	0	0		
Barium, TCLP	0.501	0.0100	0.5	0	100	90	110	0	0		
Cadmium, TCLP	0.05	0.00100	0.05	0	100	90	110	0	0		
Chromium, TCLP	0.2537	0.00500	0.25	0	101	90	110	0	0		
Lead, TCLP	1.003	0.0200	1	0	100	90	110	0	0		
Selenium, TCLP	0.9927	0.0200	1	0	99.3	90	110	0	0		
Silver, TCLP	0.4955	0.0100	0.5	0	99.1	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 10

CLIENT: Maul, Foster & Alongi
Work Order: 0508078
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HCID_NW

Sample ID	MB-14092	SampType	MBLK	TestCode	HCID_NW	Units	mg/Kg	Prep Date	8/18/2005	Run ID	GC-M_050818A		
Client ID	ZZZZZ	Batch ID	14092	TestNo	NWHCID			Analysis Date	8/18/2005	SeqNo	347851		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	20.0									
Mineral Spirits	ND	20.0									
Kerosene	ND	50.0									
Diesel	ND	50.0									
Lube Oil	ND	100									
Surr: BFB	86.15	0	100	0	86.2	50	150	0	0		
Surr: o-Terphenyl	97.4	0	100	0	97.4	50	150	0	0		

Sample ID	0508078-02ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	8/18/2005	Run ID:	GC-M_050818A		
Client ID:	P4-081805	Batch ID:	14092	TestNo:	NWHCID			Analysis Date:	8/18/2005	SeqNo:	347850		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	20.8	0	0	0	0	0	0	0	0	20
Mineral Spirits	ND	20.8	0	0	0	0	0	0	0	0	20
Kerosene	ND	52.1	0	0	0	0	0	0	0	0	20
Diesel	ND	52.1	0	0	0	0	0	0	0	0	20
Lube Oil	184	104	0	0	0	0	0	157.7	15.4	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 10

CLIENT: Maul, Foster & Alongi
Work Order: 0508078
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID	MB-14102	SampType:	MBLK	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	CVAA_050819A			
Client ID:	ZZZZZ	Batch ID:	14102	TestNo:	1311/7000			Analysis Date:	8/19/2005	SeqNo:	348047			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		ND		0.000100										

Sample ID	LCS-14102	SampType:	LCS	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	CVAA_050819A			
Client ID:	ZZZZZ	Batch ID:	14102	TestNo:	1311/7000			Analysis Date:	8/19/2005	SeqNo:	348046			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		0.00402		0.000100	0.004	0		100	85.4	116	0	0		

Sample ID	0508078-02BMS	SampType:	MS	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	CVAA_050819A			
Client ID:	P4-081805	Batch ID:	14102	TestNo:	1311/7000			Analysis Date:	8/19/2005	SeqNo:	348043			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		0.004635		0.000100	0.004	0		116	69.5	125	0	0		

Sample ID	0508078-02BMSD	SampType:	MSD	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	CVAA_050819A			
Client ID:	P4-081805	Batch ID:	14102	TestNo:	1311/7000			Analysis Date:	8/19/2005	SeqNo:	348044			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		0.004867		0.000100	0.004	0		122	69.5	125	0.004635	4.88	20	

Sample ID	0508078-02BDUP	SampType:	DUP	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:	8/19/2005	Run ID:	CVAA_050819A			
Client ID:	P4-081805	Batch ID:	14102	TestNo:	1311/7000			Analysis Date:	8/19/2005	SeqNo:	348042			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		ND		0.000100	0	0		0	0	0	0	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	HG_TCLP	Units:	mg/L	Prep Date:		Run ID:	CVAA_050819A			
Client ID:	ZZZZZ	Batch ID:	14102	TestNo:	1311/7000			Analysis Date:	8/19/2005	SeqNo:	348045			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 7 of 10

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508078
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID	CCV	SampType	CCV	TestCode	HG_TCLP	Units	mg/L	Prep Date:		Run ID:	CVAA_050819A		
Client ID:	ZZZZZ	Batch ID:	14102	TestNo:	1311/7000			Analysis Date:	8/19/2005	SeqNo:	348045		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		0.004034		0.000100	0.004	0	101	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 8 of 10

CLIENT: Maul, Foster & Alongi
Work Order: 0508078
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	MB-14098	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	8/18/2005	Run ID:	GC-M_050818C		
Client ID:	ZZZZZ	Batch ID:	14098	TestNo:	NWTPH-Dx			Analysis Date:	8/18/2005	SeqNo:	347992		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	10.9	15.0												J
Lube Oil	ND	50.0												
Surr: o-Terphenyl	36.13	0	33.33	0	108	50	150	0	0					

Sample ID	LCS-14098	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	8/18/2005	Run ID:	GC-M_050818C		
Client ID:	ZZZZZ	Batch ID:	14098	TestNo:	NWTPH-Dx			Analysis Date:	8/18/2005	SeqNo:	347991		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	185.1	15.0	167	10.9	104	76.3	125	0	0					
Lube Oil	190.8	50.0	167	0	114	69.9	127	0	0					

Sample ID	0508078-01ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	8/18/2005	Run ID:	GC-M_050818C		
ClientID:	P3-081805	Batch ID:	14098	TestNo:	NWTPH-Dx			Analysis Date:	8/18/2005	SeqNo:	347989		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	16.2	0	0	0	0	0	0	0	0	20	A3
Lube Oil	436	53.9	0	0	0	0	0	394.5	9.99	20	A2	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050818C		
Client ID:	ZZZZZ	Batch ID:	14098	TestNo:	NWTPH-Dx			Analysis Date:	8/18/2005	SeqNo:	347993		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	697.5	15.0	670.9	0	104	85	115	0	0			
Lube Oil	370.2	50.0	338.5	0	109	85	115	0	0			

Sample ID	CCV-2	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050818C		
Client ID:	ZZZZZ	Batch ID:	14098	TestNo:	NWTPH-Dx			Analysis Date:	8/18/2005	SeqNo:	347994		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	368	15.0	335.5	0	110	85	115	0	0			
--------	-----	------	-------	---	-----	----	-----	---	---	--	--	--

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Page 9 of 10

CLIENT: Maul, Foster & Alongi
WorkOrder: 0508078
Project: AACP/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	CCV-2	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_050818C		
Client ID:	ZZZZZ	Batch ID:	14098	TestNo:	NWTPH-Dx			AnalysisDate:	8/18/2005	SeqNo:	347994		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil		273.7		50.0	253.9	0	108	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

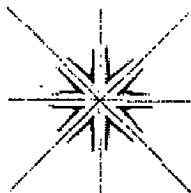
B - Analyte detected in the associated Method Blank

Page 10 of 10

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page 1 of 1



19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Contact Person/Project Manager Anna St. John
Company MFA inc.
Address ~~327~~ 3121 SW Moody Ave Ste 200
Portland OR 97239
Phone 503-544-2139 Fax 503-544-2140
Project No. 0100-01-02 Project Name AACP
Invoice To _____ P.O. No. _____

Collected By: _____
Signature: Charles W. [unclear]

Printed: Charles W. Lee

Signature _____

Printed: _____

Turn Around Time

☐ Normal

☒ Rush

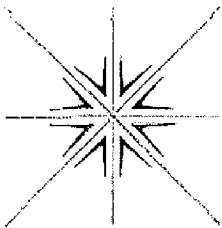
2 Done

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

[illegible]

IMPORTED FILL



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

July 28, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACC / 0100.01.01

Dear Anna St. John:

Order No.: 0507083

Specialty Analytical received 4 samples on 7/21/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 28-Jul-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.01

Lab Order: 0507083

Lab ID: 0507083-01 Collection Date: 7/20/2005 11:30:00 AM
Client Sample ID: FILL1-072005 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: zau
Lead	10.9	1.96		mg/Kg	1	7/22/2005 5:38:11 PM
PAH'S BY GC/MS-OARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Acenaphthylene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Anthracene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Benz(a)anthracene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Benzo(a)pyrene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Benzo(b)fluoranthene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Benzo(g,h,i)perylene	7.33	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Benzo(k)fluoranthene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Chrysene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Fluoranthene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Fluorene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Indeno(1,2,3-cd)pyrene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Naphthalene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Phenanthrene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Pyrene	ND	6.67		µg/Kg	1	7/27/2005 10:51:00 AM
Surr: 2-Fluorobiphenyl	72.2	42.6-128		%REC	1	7/27/2005 10:51:00 AM
Surr: Nitrobenzene-d5	54.9	21.7-155		%REC	1	7/27/2005 10:51:00 AM
Surr: p-Terphenyl-d14	82.4	44.9-155		%REC	1	7/27/2005 10:51:00 AM

Specialty Analytical

Date: 28-Jul-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.01

Lab Order: 0507083

Lab ID: 0507083-02
Client Sample ID: FILL2-072005

Collection Date: 7/20/2005 12:00:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: zau
Lead	11.1	1.75		mg/Kg	1	7/22/2005 6:25:49 PM
PAH'S BY GC/MS-OARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	12.0	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Acenaphthylene	ND	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Anthracene	47.3	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Benzo(a)anthracene	51.3	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Benzo(a)pyrene	46.7	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Benzo(b)fluoranthene	57.3	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Benzo(g,h,i)perylene	30.0	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Benzo(k)fluoranthene	20.0	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Chrysene	48.7	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Dibenz(a,h)anthracene	11.3	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Fluoranthene	73.3	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Fluorene	14.0	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Indeno(1,2,3-cd)pyrene	26.0	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Naphthalene	ND	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Phenanthrene	133	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Pyrene	88.7	6.67		µg/Kg	1	7/27/2005 11:23:00 AM
Surr: 2-Fluorobiphenyl	83.8	42.6-128		%REC	1	7/27/2005 11:23:00 AM
Surr: Nitrobenzene-d5	66.9	21.7-155		%REC	1	7/27/2005 11:23:00 AM
Surr: p-Terphenyl-d14	94.0	44.9-155		%REC	1	7/27/2005 11:23:00 AM

Specialty Analytical

Date: 28-Jul-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.01

Lab Order: 0507083

Lab ID: 0507083-03
Client Sample ID: FILL3-072005

Collection Date: 7/20/2005 3:00:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: zau
Lead	9.09	1.79		mg/Kg	1	7/22/2005 6:31:19 PM
PAH'S BY GC/MS-OARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Acenaphthylene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Anthracene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Benz(a)anthracene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Benzo(a)pyrene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Benzo(b)fluoranthene	8.67	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Benzo(g,h,i)perylene	10.7	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Benzo(k)fluoranthene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Chrysene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Fluoranthene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Fluorene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Indeno(1,2,3-cd)pyrene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Naphthalene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Phenanthrene	ND	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Pyrene	7.33	6.67		µg/Kg	1	7/27/2005 11:54:00 AM
Surr: 2-Fluorobiphenyl	82.9	42.6-128		%REC	1	7/27/2005 11:54:00 AM
Surr: Nitrobenzene-d5	66.5	21.7-155		%REC	1	7/27/2005 11:54:00 AM
Surr: p-Terphenyl-d14	94.8	44.9-155		%REC	1	7/27/2005 11:54:00 AM

Specialty Analytical

Date: 28-Jul-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.01

Lab Order: 0507083

Lab ID: 0507083-04
Client Sample ID: FILL4-072105

Collection Date: 7/21/2005 10:30:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: zau
Lead	10.5	1.96		mg/Kg	1	7/22/2005 6:36:49 PM
PAH'S BY GC/MS-OARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Anthracene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Benz(a)anthracene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Benzo(a)pyrene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Benzo(b)fluoranthene	8.00	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Benzo(g,h,i)perylene	8.67	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Benzo(k)fluoranthene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Chrysene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Fluoranthene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Fluorene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Indeno(1,2,3-cd)pyrene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Naphthalene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Phenanthrene	ND	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Pyrene	7.33	6.67		µg/Kg	1	7/27/2005 12:25:00 PM
Surr: 2-Fluorobiphenyl	80.2	42.6-128		%REC	1	7/27/2005 12:25:00 PM
Surr: Nitrobenzene-d5	58.1	21.7-155		%REC	1	7/27/2005 12:25:00 PM
Surr: p-Terphenyl-d14	92.3	44.9-155		%REC	1	7/27/2005 12:25:00 PM

Specialty Analytical

Date: 29-Jul-05

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507083
 Project: AACC/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13916	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	TJAIRIS_050722A
Client ID:	ZZZZZ	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342878
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cobalt	ND	0.500									
Lead	ND	2.00									
Nickel	ND	0.500									

Sample ID	LCS-13916	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	TJAIRIS_050722A
Client ID:	ZZZZZ	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342879
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	24.27	0.500	25	0	97.1	80	120	0	0		
Lead	102.2	2.00	100	0	102	84.9	109	0	0		
Nickel	24.42	0.500	25	0	97.7	85.5	112	0	0		

Sample ID	0507083-01AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	TJAIRIS_050722A
Client ID:	FILL1-072005	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342883
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	41.01	0.490	24.51	16.03	102	75	125	0	0		
Lead	113.5	1.96	98.04	10.94	105	84.9	109	0	0		
Nickel	34.09	0.490	24.51	9.902	98.7	89.3	105	0	0		

Sample ID	0507083-01AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	TJAIRIS_050722A
Client ID:	FILL1-072005	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342884
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	37.51	0.481	24.04	16.03	89.4	75	125	41.01	8.92	20	
Lead	106.3	1.92	96.15	10.94	99.2	84.9	109	113.5	6.53	20	
Nickel	31.77	0.481	24.04	9.902	91	89.3	105	34.09	7.04	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 1 of 5

AAC000571

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507083
Project: AACC/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0507083-01ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	7/22/2005	Run ID:	TJAIRIS_050722A	
Client ID:	FILL1-072005	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342882	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt		16.71	0.490	0	0	0	0	0	16.03	4.13	20	
Lead		10.23	1.96	0	0	0	0	0	10.94	6.76	20	
Nickel		9.971	0.490	0	0	0	0	0	9.902	0.691	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050722A	
Client ID:	ZZZZZ	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342881	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt		25.19	0.500	25	0	101	90	110	0	0		
Lead		101.2	2.00	100	0	101	90	110	0	0		
Nickel		25.15	0.500	25	0	101	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050722A	
Client ID:	ZZZZZ	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342892	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt		25.35	0.500	25	0	101	90	110	0	0		
Lead		103	2.00	100	0	103	90	110	0	0		
Nickel		25.26	0.500	25	0	101	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050722A	
Client ID:	ZZZZZ	Batch ID:	13916	TestNo:	E6010			Analysis Date:	7/22/2005	SeqNo:	342877	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt		25.33	0.500	25	0	101	90	110	0	0		
Lead		103.1	2.00	100	0	103	90	110	0	0		
Nickel		25.24	0.500	25	0	101	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 5

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507083
 Project: AACC/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13194	SampType	MBLK	TestCode	PAHLL_S	Units	µg/Kg	Prep Date	7/21/2005	Run ID	5973P_050727A
Client ID	ZZZZZ	Batch ID	13914	TestNo	8270SIM			Analysis Date	7/27/2005	SeqNo	343674
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	0.6667	6.67									J
Benz(a)anthracene	1.333	6.67									J
Benzo(a)pyrene	ND	6.67									
Benzo(b)fluoranthene	ND	6.67									
Benzo(g,h,i)perylene	1.333	6.67									J
Benzo(k)fluoranthene	0.6667	6.67									J
Chrysene	ND	6.67									
Dibenz(a,h)anthracene	ND	6.67									
Fluoranthene	ND	6.67									
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	ND	6.67									
Naphthalene	ND	6.67									
Phenanthrene	ND	6.67									
Pyrene	ND	6.67									
Surr:p-Terphenyl-d14	6081	0	6667	0	91.2	44.9	155	0	0		

Sample ID	LCS-13194	SampType	LCS	TestCode	PAHLL_S	Units	µg/Kg	Prep Date	7/21/2005	Run ID	5973P_050727A
Client ID	ZZZZZ	Batch ID	13914	TestNo	8270SIM			Analysis Date	7/27/2005	SeqNo	343673
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	113.3	6.67	166.7	0	68	39.6	95.8	0	0		
Benzo(g,h,i)perylene	156	6.67	166.7	1.333	92.8	49.7	115	0	0		
Chrysene	161.3	6.67	166.7	0	96.8	57.1	112	0	0		
Naphthalene	111.3	6.67	166.7	0	66.8	29.1	103	0	0		
Phenanthrene	134.7	6.67	166.7	0	80.8	48.4	105	0	0		
Pyrene	160.7	6.67	166.7	0	96.4	47.2	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507083
 Project: AACC/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0507083-01AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	7/21/2005	Run ID:	5973P_050727A
Client ID:	FILL1-072005	Batch ID:	13914	TestNo:	8270SIM			Analysis Date:	7/27/2005	SeqNo:	343679
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	110.7	6.67	166.7	0	66.4	33.7	107	0	0		
Benzo(g,h,i)perylene	156.7	6.67	166.7	7.333	89.6	15	128	0	0		
Chrysene	128	6.67	166.7	4	74.4	37.5	125	0	0		
Naphthalene	98.67	6.67	166.7	0	59.2	27.7	108	0	0		
Phenanthrene	128	6.67	166.7	3.333	74.8	20.2	139	0	0		
Pyrene	94.67	6.67	166.7	6	53.2	26.8	134	0	0		

Sample ID	0507083-01AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	7/21/2005	Run ID:	5973P_050727A
Client ID:	FILL1-072005	Batch ID:	13914	TestNo:	8270SIM			Analysis Date:	7/27/2005	SeqNo:	343680
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	112.7	6.67	166.7	0	67.6	33.7	107	110.7	1.79	20	
Benzo(g,h,i)perylene	180.7	6.67	166.7	7.333	104	15	128	156.7	14.2	20	
Chrysene	140	6.67	166.7	4	81.6	37.5	125	128	8.96	20	
Naphthalene	91.33	6.67	166.7	0	54.8	27.7	108	98.67	7.72	20	
Phenanthrene	137.3	6.67	166.7	3.333	80.4	20.2	139	128	7.04	20	
Pyrene	102.7	6.67	166.7	6	58	26.8	134	94.67	8.11	20	

Sample ID	CCV-13914	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_050727A
Client ID:	ZZZZZ	Batch ID:	13914	TestNo:	8270SIM			Analysis Date:	7/27/2005	SeqNo:	343672
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	136.7	6.67	133.3	0	103	70	130	0	0		
Acenaphthylene	137.3	6.67	133.3	0	103	70	130	0	0		
Anthracene	139.3	6.67	133.3	0	104	70	130	0	0		
Benz(a)anthracene	131.3	6.67	133.3	0	98.5	70	130	0	0		
Benzo(a)pyrene	132	6.67	133.3	0	99	70	130	0	0		
Benzo(b)fluoranthene	127.3	6.67	133.3	0	95.5	70	130	0	0		
Benzo(g,h,i)perylene	135.3	6.67	133.3	0	102	70	130	0	0		
Benzo(k)fluoranthene	123.3	6.67	133.3	0	92.5	70	130	0	0		
Chrysene	134	6.67	133.3	0	101	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507083
Project: AACC/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-13914	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973P_050727A	
Client ID:	ZZZZZ	Batch ID:	13914	TestNo:	8270SIM			Analysis Date:	7/27/2005	SeqNo:	343672	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene		130.7	6.67	133.3	0	98	70	130	0	0		
Fluoranthene		130	6.67	133.3	0	97.5	70	130	0	0		
Fluorene		135.3	6.67	133.3	0	102	70	130	0	0		
Indeno(1,2,3-cd)pyrene		131.3	6.67	133.3	0	98.5	70	130	0	0		
Naphthalene		135.3	6.67	133.3	0	102	70	130	0	0		
Phenanthrene		136.7	6.67	133.3	0	103	70	130	0	0		
Pyrene		152	6.67	133.3	0	114	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

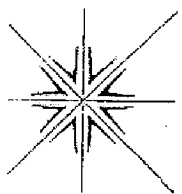
Page 5 of 5

AAC000575

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page ____ of ____



19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007 - Phone
(503) 612-8572 - Fax

Fax 971-544-2140

Invoice To _____ P.O. No. _____

Signature _____

Printed

Signature _____

Printed

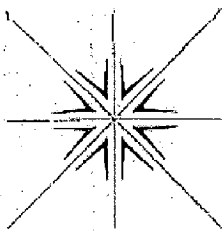
☒ Normal

☐ Rush

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

[illegible]



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
T (877) 612-9007

August 09, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139
FAX (971) 544-2140

RE: AACP / 0100.01.01

Dear Anna St. John:

Order No.: 0507125

Specialty Analytical received 2 samples on 7/29/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 09-Aug-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.01

Lab Order: 0507125

Lab ID: 0507125-01
Client Sample ID: FILL5-072905

Collection Date: 7/29/2005 10:40:00 AM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: zau
Lead	10.4	1.56		mg/Kg	1	8/1/2005 5:04:08 PM
PAH'S BY GC/MS-OARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Acenaphthylene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Anthracene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Benz(a)anthracene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Benzo(a)pyrene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Benzo(b)fluoranthene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Benzo(g,h,i)perylene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Benzo(k)fluoranthene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Chrysene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Dibenz(a,h)anthracene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Fluoranthene	13.3	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Fluorene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Indeno(1,2,3-cd)pyrene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Naphthalene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Phenanthrene	ND	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Pyrene	16.0	13.3		µg/Kg	1	8/4/2005 4:08:00 PM
Surr: 2-Fluorobiphenyl	105	42.6-128		%REC	1	8/4/2005 4:08:00 PM
Surr: Nitrobenzene-d5	90.3	21.7-155		%REC	1	8/4/2005 4:08:00 PM
Surr: p-Terphenyl-d14	164	44.9-155	S	%REC	1	8/4/2005 4:08:00 PM

Specialty Analytical

Date: 09-Aug-05

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.01

Lab Order: 0507125

Lab ID: 0507125-02

Collection Date: 7/29/2005 2:00:00 PM

Client Sample ID: FILL6-072905

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: zau
Lead	5.22	1.72		mg/Kg	1	8/1/2005 5:09:40 PM
PAH'S BY GC/MS-QARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Acenaphthylene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Anthracene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Benz(a)anthracene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Benzo(a)pyrene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Benzo(b)fluoranthene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Benzo(g,h,i)perylene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Benzo(k)fluoranthene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Chrysene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Dibenz(a,h)anthracene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Fluoranthene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Fluorene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Indeno(1,2,3-cd)pyrene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Naphthalene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Phenanthrene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Pyrene	ND	13.3		µg/Kg	1	8/4/2005 4:40:00 PM
Surr: 2-Fluorobiphenyl	119	42.6-128		%REC	1	8/4/2005 4:40:00 PM
Surr: Nitrobenzene-d5	98.7	21.7-155		%REC	1	8/4/2005 4:40:00 PM
Surr: p-Terphenyl-d14	167	44.9-155	S	%REC	1	8/4/2005 4:40:00 PM

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507125
 Project: AACP/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-13976	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/1/2005	Run ID:	TJAIRIS_050801A	
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344648	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		ND	2.00									

Sample ID	LCS-13976	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/1/2005	Run ID:	TJAIRIS_050801A	
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344649	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		98.13	2.00	100	0	98.1	84.9	109	0	0		

Sample ID	0507124-01AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/1/2005	Run ID:	TJAIRIS_050801A	
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344652	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		97.64	1.89	94.34	0	104	84.9	109	0	0		

Sample ID	0507124-01AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/1/2005	Run ID:	TJAIRIS_050801A	
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344653	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		91.15	1.89	94.34	0	96.6	84.9	109	99.39	8.64	20	

Sample ID	0507124-01ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/1/2005	Run ID:	TJAIRIS_050801A	
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344651	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		5.434	1.89	0	0	0	0	0	0	200	20	RF

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507125
 Project: AACP/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050801A		
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344647		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	101	2.00	100	0	101	90	110	0	0
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050801A		
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344655		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	102.2	2.00	100	0	102	90	110	0	0
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Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050801A		
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/1/2005	SeqNo:	344660		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	101.7	2.00	100	0	102	90	110	0	0
------	-------	------	-----	---	-----	----	-----	---	---

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050801A		
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/2/2005	SeqNo:	344795		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	102.1	2.00	100	0	102	90	110	0	0
------	-------	------	-----	---	-----	----	-----	---	---

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050801A		
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			AnalysisDate:	8/1/2005	SeqNo:	344646		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead	102.6	2.00	100	0	103	90	110	0	0
------	-------	------	-----	---	-----	----	-----	---	---

Sample ID	ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJAIRIS_050801A					
Client ID: ZZZZZ	Batch ID: 13976	TestNo: E6010	AnalysisDate: 8/2/2005	SeqNo: 344787							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507125
Project: AACP/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJAIRIS_050801A		
Client ID:	ZZZZZ	Batch ID:	13976	TestNo:	E6010			Analysis Date:	8/2/2005	SeqNo:	344787		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		101.2		2.00	100	0	101	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 3 of 6

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507125
Project: AACP/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-13998	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	8/3/2005	Run ID:	5973G_050804B
Client ID:	ZZZZZ	Batch ID:	13998	TestNo:	8270SIM			Analysis Date:	8/4/2005	SeqNo:	345420
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	ND	6.67									
Benz(a)anthracene	0.6667	6.67									J
Benzo(a)pyrene	ND	6.67									
Benzo(b)fluoranthene	ND	6.67									
Benzo(g,h,i)perylene	ND	6.67									
Benzo(k)fluoranthene	ND	6.67									
Chrysene	ND	6.67									
Dibenz(a,h)anthracene	ND	6.67									
Fluoranthene	ND	6.67									
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	ND	6.67									
Naphthalene	2.667	6.67									J
Phenanthrene	ND	6.67									
Pyrene	ND	6.67									
Surr: 2-Fluorobiphenyl	7331	0	6667	0	110	42.6	128	0	0		
Surr: Nitrobenzene-d5	6055	0	6667	0	90.8	21.7	155	0	0		
Surr: p-Terphenyl-d14	9216	0	6667	0	138	44.9	155	0	0		

Sample ID	LCS-13998	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	8/3/2005	Run ID:	5973G_050804B
Client ID:	ZZZZZ	Batch ID:	13998	TestNo:	8270SIM			Analysis Date:	8/4/2005	SeqNo:	345421
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	144.7	6.67	166.7	0	86.8	39.6	95.8	0	0		
Benzo(g,h,i)perylene	162.7	6.67	166.7	0	97.6	49.7	115	0	0		
Chrysene	173.3	6.67	166.7	0	104	57.1	112	0	0		
Naphthalene	132	6.67	166.7	2.667	77.6	29.1	103	0	0		
Phenanthrene	147.3	6.67	166.7	0	88.4	48.4	105	0	0		
Pyrene	147.3	6.67	166.7	0	88.4	47.2	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0507125
 Project: AACP/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0507125-02AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	8/3/2005	Run ID:	5973G_050804B
Client ID:	FILL6-072905	Batch ID:	13998	TestNo:	8270SIM			Analysis Date:	8/4/2005	SeqNo:	345422
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	133.3	13.3	166.7	0	80	33.7	107	0	0		
Benzo(g,h,i)perylene	217.3	13.3	166.7	10.67	124	15	128	0	0		
Chrysene	184	13.3	166.7	5.333	107	37.5	125	0	0		
Naphthalene	108	13.3	166.7	0	64.8	27.7	108	0	0		
Phenanthrene	149.3	13.3	166.7	4	87.2	20.2	139	0	0		
Pyrene	206.7	13.3	166.7	10.67	118	26.8	134	0	0		

Sample ID	0507125-02AMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	8/3/2005	Run ID:	5973G_050804B
Client ID:	FILL6-072905	Batch ID:	13998	TestNo:	8270SIM			Analysis Date:	8/4/2005	SeqNo:	345423
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	129.3	13.3	166.7	0	77.6	33.7	107	133.3	3.05	20	
Benzo(g,h,i)perylene	213.3	13.3	166.7	10.67	122	15	128	217.3	1.86	20	
Chrysene	178.7	13.3	166.7	5.333	104	37.5	125	184	2.94	20	
Naphthalene	117.3	13.3	166.7	0	70.4	27.7	108	108	8.28	20	
Phenanthrene	144	13.3	166.7	4	84	20.2	139	149.3	3.64	20	
Pyrene	204	13.3	166.7	10.67	116	26.8	134	206.7	1.30	20	

Sample ID	CCV-13998	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050804B
Client ID:	ZZZZZ	Batch ID:	13998	TestNo:	8270SIM			Analysis Date:	8/4/2005	SeqNo:	345419
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	348.7	6.67	333.3	0	105	70	130	0	0		
Acenaphthylene	360.7	6.67	333.3	0	108	70	130	0	0		
Anthracene	330.7	6.67	333.3	0	99.2	70	130	0	0		
Benzo(a)anthracene	320	6.67	333.3	0	96	70	130	0	0		
Benzo(a)pyrene	369.3	6.67	333.3	0	111	70	130	0	0		
Benzo(b)fluoranthene	339.3	6.67	333.3	0	102	70	130	0	0		
Benzo(g,h,i)perylene	376	6.67	333.3	0	113	70	130	0	0		
Benzo(k)fluoranthene	374.7	6.67	333.3	0	112	70	130	0	0		
Chrysene	350	6.67	333.3	0	105	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0507125
Project: AACP/0100.01.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-13998	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050804B
Client ID:	ZZZZZ	Batch ID:	13998	TestNo:	8270SIM			Analysis Date:	8/4/2005	SeqNo:	345419
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	373.3	6.67	333.3	0	112	70	130	0	0		
Fluoranthene	361.3	6.67	333.3	0	108	70	130	0	0		
Fluorene	372.7	6.67	333.3	0	112	70	130	0	0		
Indeno(1,2,3-cd)pyrene	380.7	6.67	333.3	0	114	70	130	0	0		
Naphthalene	336	6.67	333.3	0	101	70	130	0	0		
Phenanthrene	323.3	6.67	333.3	0	97	70	130	0	0		
Pyrene	323.3	6.67	333.3	0	97	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

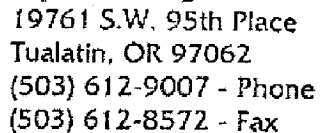
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 6

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.



Page__ of .

Contact Person/Project Manager Anna ST John
Company Maul Foster & Alonzi
Address 3121 SW Moody Ave Ste 200
Portland, OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 6160.01.01 Project Name AACP
Invoice To _____ P.O. No. _____

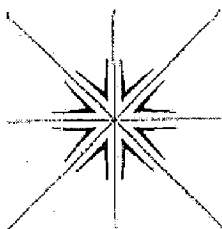
Printed Charles Wice

Printed _____

☐ Rush

Rush Analyses Must Be Scheduled With The Lab In Advance

AAC000588



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

August 09, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACC / 0100.01.02

Dear Anna St. John:

Order No.: 0508026

Specialty Analytical received 2 samples on 8/4/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 09-Aug-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.02

Lab Order: 0508026

Lab ID: 0508026-01
Client Sample ID: FILL7-080205

Collection Date: 8/2/2005 11:45:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
	E6010					Analyst: zau
Lead	7.38	1.52		mg/Kg	1	8/5/2005 5:14:01 PM
PAH'S BY GC/MS-OARSIM (8270C)						
	8270SIM					Analyst: bda
Acenaphthene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Anthracene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Benz(a)anthracene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Benzo(a)pyrene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Benzo(b)fluoranthene	10.0	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Benzo(g,h,i)perylene	8.67	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Benzo(k)fluoranthene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Chrysene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Fluoranthene	8.67	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Fluorene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Indeno(1,2,3-cd)pyrene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Naphthalene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Phenanthrene	ND	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Pyrene	10.0	6.67		µg/Kg	1	8/8/2005 12:35:00 PM
Surr: 2-Fluorobiphenyl	78.8	42.6-128		%REC	1	8/8/2005 12:35:00 PM
Surr: Nitrobenzene-d5	65.2	21.7-155		%REC	1	8/8/2005 12:35:00 PM
Surr: p-Terphenyl-d14	99.7	44.9-155		%REC	1	8/8/2005 12:35:00 PM

Specialty Analytical

Date: 09-Aug-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.02

Lab Order: 0508026

Lab ID: 0508026-02
Client Sample ID: FILL8-080305

Collection Date: 8/3/2005 2:30:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
		E6010				Analyst: zau
Lead	11.9	1.85		mg/Kg	1	8/5/2005 5:19:31 PM
PAH'S BY GC/MS-OARSIM (8270C)						
		8270SIM				Analyst: bda
Acenaphthene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Anthracene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Benz(a)anthracene	7.33	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Benzo(a)pyrene	7.33	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Benzo(b)fluoranthene	10.0	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Benzo(g,h,i)perylene	8.00	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Benzo(k)fluoranthene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Chrysene	7.33	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Fluoranthene	12.0	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Fluorene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Indeno(1,2,3-cd)pyrene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Naphthalene	ND	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Phenanthrene	7.33	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Pyrene	13.3	6.67		µg/Kg	1	8/8/2005 1:06:00 PM
Surr: 2-Fluorobiphenyl	70.9	42.6-128		%REC	1	8/8/2005 1:06:00 PM
Surr: Nitrobenzene-d5	53.9	21.7-155		%REC	1	8/8/2005 1:06:00 PM
Surr: p-Terphenyl-d14	92.4	44.9-155		%REC	1	8/8/2005 1:06:00 PM

CLIENT: Maul, Foster & Alongi
 Work Order: 0508026
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-14017	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/4/2005	Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345710	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		ND	2.00									

Sample ID	LCS-14017	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/4/2005	Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345711	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		104.3	2.00	100	0	104	84.9	109	0	0		

Sample ID	0508024-09AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/4/2005	Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345713	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		92.88	1.69	84.75	4.922	104	84.9	109	0	0		

Sample ID	0508024-09AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/4/2005	Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345714	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		93.64	1.69	84.75	4.922	105	84.9	109	92.88	0.818	20	

Sample ID	0508024-09ADUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	8/4/2005	Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345712	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		7.017	1.72	0	0	0	0	0	4.922	35.1	20	R

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0508026
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345717	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		101.9	2.00	100	0	102	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345851	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		102.3	2.00	100	0	102	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050805A	
Client ID:	ZZZZZ	Batch ID:	14017	TestNo:	E6010			Analysis Date:	8/5/2005	SeqNo:	345707	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		100.7	2.00	100	0	101	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 2 of 5

CLIENT: Maul, Foster & Alongi
 Work Order: 0508026
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-14018	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	8/5/2005	Run ID:	5973G_050808A
Client ID:	ZZZZZ	Batch ID:	14018	TestNo:	8270SIM			Analysis Date:	8/8/2005	SeqNo:	345853
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	ND	6.67									
Benz(a)anthracene	0.6667	6.67									J
Benzo(a)pyrene	ND	6.67									
Benzo(b)fluoranthene	ND	6.67									
Benzo(g,h,i)perylene	ND	6.67									
Benzo(k)fluoranthene	ND	6.67									
Chrysene	ND	6.67									
Dibenz(a,h)anthracene	ND	6.67									
Fluoranthene	ND	6.67									
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	ND	6.67									
Naphthalene	ND	6.67									
Phenanthrene	ND	6.67									
Pyrene	ND	6.67									
Surr: 2-Fluorobiphenyl	6134	0	6667	0	92	42.6	128	0	0		
Surr: Nitrobenzene-d5	5421	0	6667	0	81.3	21.7	155	0	0		
Surr: p-Terphenyl-d14	7875	0	6667	0	118	44.9	155	0	0		

Sample ID	LCS-14018	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	8/5/2005	Run ID:	5973G_050808A
Client ID:	ZZZZZ	Batch ID:	14018	TestNo:	8270SIM			Analysis Date:	8/8/2005	SeqNo:	345854
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	122	6.67	166.7	0	73.2	39.6	95.8	0	0		
Benzo(g,h,i)perylene	163.3	6.67	166.7	0	98	49.7	115	0	0		
Chrysene	163.3	6.67	166.7	0	98	57.1	112	0	0		
Naphthalene	108	6.67	166.7	0	64.8	29.1	103	0	0		
Phenanthrene	146	6.67	166.7	0	87.6	48.4	105	0	0		
Pyrene	165.3	6.67	166.7	0	99.2	47.2	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0508026
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0508015-01BMS	SampType: MS	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 8/5/2005	Run ID: 5973G_050808A					
Client ID: ZZZZZ	Batch ID: 14018	TestNo: 8270SIM	Analysis Date: 8/8/2005	SeqNo: 345858							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	172	13.3	166.7	0	103	33.7	107	0	0		
Benzo(g,h,i)perylene	266.7	13.3	166.7	33.33	140	15	128	0	0		S
Chrysene	210.7	13.3	166.7	9.333	121	37.5	125	0	0		
Naphthalene	126.7	13.3	166.7	0	76	27.7	108	0	0		
Phenanthrene	217.3	13.3	166.7	10.67	124	20.2	139	0	0		
Pyrene	225.3	13.3	166.7	17.33	125	26.8	134	0	0		

Sample ID	0508015-01BMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 8/5/2005	Run ID: 5973G_050808A					
Client ID: ZZZZZ	Batch ID: 14018	TestNo: 8270SIM	Analysis Date: 8/8/2005	SeqNo: 345859							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	164	13.3	166.7	0	98.4	33.7	107	172	4.76	20	
Benzo(g,h,i)perylene	238.7	13.3	166.7	33.33	123	15	128	266.7	11.1	20	
Chrysene	198.7	13.3	166.7	9.333	114	37.5	125	210.7	5.86	20	
Naphthalene	144	13.3	166.7	0	86.4	27.7	108	126.7	12.8	20	
Phenanthrene	193.3	13.3	166.7	10.67	110	20.2	139	217.3	11.7	20	
Pyrene	218.7	13.3	166.7	17.33	121	26.8	134	225.3	3.00	20	

Sample ID	CCV-14018	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_050808A					
Client ID: ZZZZZ	Batch ID: 14018	TestNo: 8270SIM	Analysis Date: 8/8/2005	SeqNo: 345852							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	72	6.67	66.67	0	108	70	130	0	0		
Acenaphthylene	69.33	6.67	66.67	0	104	70	130	0	0		
Anthracene	62.67	6.67	66.67	0	94	70	130	0	0		
Benz(a)anthracene	62	6.67	66.67	0	93	70	130	0	0		
Benzo(a)pyrene	64	6.67	66.67	0	96	70	130	0	0		
Benzo(b)fluoranthene	68.67	6.67	66.67	0	103	70	130	0	0		
Benzo(g,h,i)perylene	70.67	6.67	66.67	0	106	70	130	0	0		
Benzo(k)fluoranthene	73.33	6.67	66.67	0	110	70	130	0	0		
Chrysene	71.33	6.67	66.67	0	107	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 0508026
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-14018	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_050808A					
Client ID:	ZZZZZ	Batch ID: 14018	TestNo: 8270SIM		Analysis Date: 8/8/2005	SeqNo: 345852					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	68.67	6.67	66.67	0	103	70	130	0	0		
Fluoranthene	64	6.67	66.67	0	96	70	130	0	0		
Fluorene	70	6.67	66.67	0	105	70	130	0	0		
Indeno(1,2,3-cd)pyrene	69.33	6.67	66.67	0	104	70	130	0	0		
Naphthalene	70	6.67	66.67	0	105	70	130	0	0		
Phenanthrene	70	6.67	66.67	0	105	70	130	0	0		
Pyrene	71.33	6.67	66.67	0	107	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

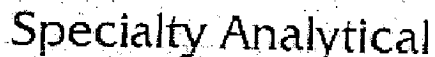
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 5

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.



CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact Person/Project Manager ANNA ST. JOHN
Company MAUL FOSTER & ALONGI
Address 3121 SW MONROE AVE STE 200
PORTLAND OR 97239
Phone 971-544-2139 Fax 971-544-2140
Project No. 0100.01.02 Project Name AACU
Invoice To _____ P.O. No. _____

Signature _____

Printed.

Signature.

Printed.

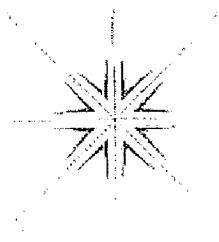
Turn Around Time

☒ Normal☐ Rush

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

AAC000598



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-8007
Fax (503) 612-8572
1 (877) 612-8007

October 04, 2005

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACC / 0100.01.02

Dear Anna St. John:

Order No.: 0509100

Specialty Analytical received 2 samples on 9/21/2005 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: 04-Oct-05

CLIENT:	Maul, Foster & Alongi	Client Sample ID:	FILL 9-092005
Lab Order:	0509100	Collection Date:	9/20/2005 1:30:00 PM
Project:	AACC / 0100.01.02		
Lab ID:	0509100-01	Matrix:	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						
	E6010					Analyst: zau
Lead	9.23	1.85		mg/Kg	1	9/22/2005 7:20:34 PM
PAH'S BY GC/MS-OARSIM (8270C)						
	8270SIM					Analyst: bda
Acenaphthene	ND	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Anthracene	ND	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Benz(a)anthracene	23.3	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Benzo(a)pyrene	34.0	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Benzo(b)fluoranthene	40.0	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Benzo(g,h,i)perylene	47.3	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Benzo(k)fluoranthene	10.0	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Chrysene	20.7	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Dibenz(a,h)anthracene	8.00	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Fluoranthene	40.7	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Fluorene	ND	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Indeno(1,2,3-cd)pyrene	32.0	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Naphthalene	12.7	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Phenanthrene	20.7	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Pyrene	50.7	6.67		µg/Kg	1	10/3/2005 4:51:00 PM
Surr: 2-Fluorobiphenyl	95.2	42.6-128		%REC	1	10/3/2005 4:51:00 PM
Surr: Nitrobenzene-d5	88.5	21.7-155		%REC	1	10/3/2005 4:51:00 PM
Surr: p-Terphenyl-d14	88.2	44.9-155		%REC	1	10/3/2005 4:51:00 PM

Specialty Analytical

Date: 04-Oct-05

CLIENT: Maul, Foster & Alongi
Lab Order: 0509100
Project: AACC / 0100.01.02
Lab ID: 0509100-02

Client Sample ID: FILL 10-092005
Collection Date: 9/20/2005 1:45:00 PM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP						Analyst: zau
E6010						9/22/2005 7:25:52 PM
Lead	9.42	1.89		mg/Kg	1	
PAH'S BY GC/MS-OARSIM (8270C)						Analyst: bda
8270SIM						9/22/2005 9:16:00 PM
Acenaphthene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Acenaphthylene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Anthracene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Benz(a)anthracene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Benzo(a)pyrene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Benzo(b)fluoranthene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Benzo(g,h,i)perylene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Benzo(k)fluoranthene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Chrysene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Dibenz(a,h)anthracene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Fluoranthene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Fluorene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Indeno(1,2,3-cd)pyrene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Naphthalene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Phenanthrene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Pyrene	ND	6.67		µg/Kg	1	9/22/2005 9:16:00 PM
Surr: 2-Fluorobiphenyl	58.1	42.6-128		%REC	1	9/22/2005 9:16:00 PM
Surr: Nitrobenzene-d5	40.1	21.7-155		%REC	1	9/22/2005 9:16:00 PM
Surr: p-Terphenyl-d14	104	44.9-155		%REC	1	9/22/2005 9:16:00 PM

CLIENT: Maul, Foster & Alongi

Work Order: 0509100

Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK-14314	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	9/22/2005	Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352432	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		ND	2.00									

Sample ID	LCS-14314	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	9/22/2005	Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352433	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		100.4	2.00	100	0	100	84.9	109	0	0		

Sample ID	0509096-01BMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	9/22/2005	Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352421	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		123.1	1.82	90.91	26.75	106	84.9	109	0	0		

Sample ID	0509096-01BMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	9/22/2005	Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352422	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		125.5	1.82	90.91	26.75	109	84.9	109	123.1	1.90	20	

Sample ID	0509096-01BDUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	9/22/2005	Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352420	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		35.04	1.82	0	0	0	0	0	26.75	26.8	20	R

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0509100
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352414	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		100.3	2.00	100	0	100	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352425	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		101.6	2.00	100	0	102	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352434	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		104.8	2.00	100	0	105	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/23/2005	SeqNo:	352574	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		102.5	2.00	100	0	103	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050922C	
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/22/2005	SeqNo:	352407	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		98.4	2.00	100	0	98.4	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:		Run ID:	TJA IRIS_050922C		
Client ID:	ZZZZZ	Batch ID:	14314	TestNo:	E6010			Analysis Date:	9/23/2005	SeqNo:	352569		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
Work Order: 0509100
Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_050922C					
Client ID: ZZZZZ	Batch ID: 14314	TestNo: E6010	Analysis Date: 9/23/2005	SeqNo: 352569							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	97.29	2.00	100	0	97.3	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 3 of 8

CLIENT: Maul, Foster & Alongi
 Work Order: 0509100
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-14308	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	9/21/2005	Run ID:	5973G_050922A
Client ID:	ZZZZZ	Batch ID:	14308	TestNo:	8270SIM			Analysis Date:	9/22/2005	SeqNo:	352309
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	ND	6.67									
Benz(a)anthracene	0.6667	6.67									J
Benzo(a)pyrene	ND	6.67									
Benzo(b)fluoranthene	ND	6.67									
Benzo(g,h,i)perylene	ND	6.67									
Benzo(k)fluoranthene	0.6667	6.67									J
Chrysene	ND	6.67									
Dibenz(a,h)anthracene	ND	6.67									
Fluoranthene	ND	6.67									
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	ND	6.67									
Naphthalene	ND	6.67									
Phenanthrene	ND	6.67									
Pyrene	ND	6.67									
Surr: 2-Fluorobiphenyl	6576	0	6667	0	98.6	42.6	128	0	0		
Surr: Nitrobenzene-d5	5995	0	6667	0	89.9	21.7	155	0	0		
Surr: p-Terphenyl-d14	11090	0	6667	0	166	44.9	155	0	0		S

Sample ID	MB-14387	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	10/3/2005	Run ID:	5973G_051003A
Client ID:	ZZZZZ	Batch ID:	14387	TestNo:	8270SIM			Analysis Date:	10/3/2005	SeqNo:	354304
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	ND	6.67									
Benz(a)anthracene	0.6667	6.67									J
Benzo(a)pyrene	ND	6.67									
Benzo(b)fluoranthene	ND	6.67									
Benzo(g,h,i)perylene	ND	6.67									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0509100
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	MB-14387	SampType:	MBLK	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	10/3/2005	Run ID:	5973G_051003A
Client ID:	ZZZZZ	Batch ID:	14387	TestNo:	8270SIM			Analysis Date:	10/3/2005	SeqNo:	354304
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	ND	6.67									
Chrysene	ND	6.67									
Dibenz(a,h)anthracene	ND	6.67									
Fluoranthene	ND	6.67									
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	ND	6.67									
Naphthalene	ND	6.67									
Phenanthrene	ND	6.67									
Pyrene	ND	6.67									
Surr: 2-Fluorobiphenyl	6603	0	6667	0	99	42.6	128	0	0		
Surr: Nitrobenzene-d5	6531	0	6667	0	98	21.7	155	0	0		
Surr: p-Terphenyl-d14	5688	0	6667	0	85.3	44.9	155	0	0		

Sample ID	LCS-14308	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	9/21/2005	Run ID:	5973G_050922A
Client ID:	ZZZZZ	Batch ID:	14308	TestNo:	8270SIM			Analysis Date:	9/22/2005	SeqNo:	352310
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	119.3	6.67	166.7	0	71.6	39.6	95.8	0	0		
Benzo(g,h,i)perylene	172	6.67	166.7	0	103	49.7	115	0	0		
Chrysene	197.3	6.67	166.7	0	118	57.1	112	0	0		S,O
Naphthalene	106.7	6.67	166.7	0	64	29.1	103	0	0		
Phenanthrene	139.3	6.67	166.7	0	83.6	48.4	105	0	0		
Pyrene	199.3	6.67	166.7	0	120	47.2	120	0	0		

Sample ID	LCS-14387	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	10/3/2005	Run ID:	5973G_051003A
Client ID:	ZZZZZ	Batch ID:	14387	TestNo:	8270SIM			Analysis Date:	10/3/2005	SeqNo:	354305
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	136.7	6.67	166.7	0	82	39.6	95.8	0	0		
Benzo(g,h,i)perylene	201.3	6.67	166.7	0	121	49.7	115	0	0		S,O
Chrysene	145.3	6.67	166.7	0	87.2	57.1	112	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0509100
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	LCS-14387	SampType:	LCS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	10/3/2005	Run ID:	5973G_051003A
Client ID:	ZZZZZ	Batch ID:	14387	TestNo:	8270SIM			Analysis Date:	10/3/2005	SeqNo:	354305

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	128.7	6.67	166.7	0	77.2	29.1	103	0	0		
Phenanthrene	148.7	6.67	166.7	0	89.2	48.4	105	0	0		
Pyrene	122	6.67	166.7	0	73.2	47.2	120	0	0		

Sample ID	0509096-01BMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	9/21/2005	Run ID:	5973G_050922A
Client ID:	ZZZZZ	Batch ID:	14308	TestNo:	8270SIM			Analysis Date:	9/22/2005	SeqNo:	352311

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	148.7	6.67	166.7	36.67	67.2	33.7	107	0	0		
Benzo(g,h,i)perylene	204.7	6.67	166.7	5.333	120	15	128	0	0		
Chrysene	190.7	6.67	166.7	7.333	110	37.5	125	0	0		
Naphthalene	152	6.67	166.7	29.33	73.6	27.7	108	0	0		
Phenanthrene	240.7	6.67	166.7	78.67	97.2	20.2	139	0	0		
Pyrene	191.3	6.67	166.7	22.67	101	26.8	134	0	0		

Sample ID	0509100-01AMS	SampType:	MS	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	10/3/2005	Run ID:	5973G_051003A
Client ID:	FILL 9-092005	Batch ID:	14387	TestNo:	8270SIM			Analysis Date:	10/3/2005	SeqNo:	354306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	160.7	6.67	166.7	4.667	93.6	33.7	107	0	0		
Benzo(g,h,i)perylene	300.7	6.67	166.7	47.33	152	15	128	0	0		S
Chrysene	177.3	6.67	166.7	20.67	94	37.5	125	0	0		
Naphthalene	154	6.67	166.7	12.67	84.8	27.7	108	0	0		
Phenanthrene	200.7	6.67	166.7	20.67	108	20.2	139	0	0		
Pyrene	194.7	6.67	166.7	50.67	86.4	26.8	134	0	0		

Sample ID	0509096-01BMSD	SampType:	MSD	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:	9/21/2005	Run ID:	5973G_050922A
Client ID:	ZZZZZ	Batch ID:	14308	TestNo:	8270SIM			Analysis Date:	9/22/2005	SeqNo:	352312

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	156.7	6.67	166.7	36.67	72	33.7	107	148.7	5.24	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 6 of 8

CLIENT: Maul, Foster & Alongi
 Work Order: 0509100
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	0509096-01BMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 9/21/2005	Run ID: 5973G_050922A					
Client ID: ZZZZZ	Batch ID: 14308	TestNo: 8270SIM	Analysis Date: 9/22/2005	SeqNo: 352312							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(g,h,i)perylene	210	6.67	166.7	5.333	123	15	128	204.7	2.57	20	
Chrysene	194.7	6.67	166.7	7.333	112	37.5	125	190.7	2.08	20	
Naphthalene	152	6.67	166.7	29.33	73.6	27.7	108	152	0	20	
Phenanthrene	254	6.67	166.7	78.67	105	20.2	139	240.7	5.39	20	
Pyrene	189.3	6.67	166.7	22.67	100	26.8	134	191.3	1.05	20	

Sample ID	0509100-01AMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 10/3/2005	Run ID: 5973G_051003A					
Client ID:	FILL 9-092005	Batch ID: 14387	TestNo: 8270SIM		Analysis Date: 10/3/2005	SeqNo: 354307					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	154.7	6.67	166.7	4.667	90	33.7	107	160.7	3.81	20	
Benzo(g,h,i)perylene	280.7	6.67	166.7	47.33	140	15	128	300.7	6.88	20	S
Chrysene	163.3	6.67	166.7	20.67	85.6	37.5	125	177.3	8.22	20	
Naphthalene	148.7	6.67	166.7	12.67	81.6	27.7	108	154	3.52	20	
Phenanthrene	189.3	6.67	166.7	20.67	101	20.2	139	200.7	5.81	20	
Pyrene	188.7	6.67	166.7	50.67	82.8	26.8	134	194.7	3.13	20	

Sample ID	CCV-14308	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_050922A					
Client ID: ZZZZZ	Batch ID: 14308	TestNo: 8270SIM	Analysis Date: 9/22/2005	SeqNo: 352308							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	34	6.67	33.33	0	102	70	130	0	0		
Acenaphthylene	32	6.67	33.33	0	96	70	130	0	0		
Anthracene	30.67	6.67	33.33	0	92	70	130	0	0		
Benz(a)anthracene	29.33	6.67	33.33	0	88	70	130	0	0		
Benzo(a)pyrene	31.33	6.67	33.33	0	94	70	130	0	0		
Benzo(b)fluoranthene	30.67	6.67	33.33	0	92	70	130	0	0		
Benzo(g,h,i)perylene	27.33	6.67	33.33	0	82	70	130	0	0		
Benzo(k)fluoranthene	36	6.67	33.33	0	108	70	130	0	0		
Chrysene	36	6.67	33.33	0	108	70	130	0	0		
Dibenz(a,h)anthracene	25.33	6.67	33.33	0	76	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 Work Order: 0509100
 Project: AACC / 0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID	CCV-14308	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_050922A
Client ID:	ZZZZZ	Batch ID:	14308	TestNo:	8270SIM			Analysis Date:	9/22/2005	SeqNo:	352308
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoranthene	32	6.67	33.33	0	96	70	130	0	0		
Fluorene	30.67	6.67	33.33	0	92	70	130	0	0		
Indeno(1,2,3-cd)pyrene	26.67	6.67	33.33	0	80	70	130	0	0		
Naphthalene	33.33	6.67	33.33	0	100	70	130	0	0		
Phenanthrene	32	6.67	33.33	0	96	70	130	0	0		
Pyrene	33.33	6.67	33.33	0	100	70	130	0	0		

Sample ID	CCV-14387	SampType:	CCV	TestCode:	PAHLL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_051003A
Client ID:	ZZZZZ	Batch ID:	14387	TestNo:	8270SIM			Analysis Date:	10/3/2005	SeqNo:	354303
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	68	6.67	66.67	0	102	70	130	0	0		
Acenaphthylene	68.67	6.67	66.67	0	103	70	130	0	0		
Anthracene	68	6.67	66.67	0	102	70	130	0	0		
Benz(a)anthracene	68.67	6.67	66.67	0	103	70	130	0	0		
Benzo(a)pyrene	72	6.67	66.67	0	108	70	130	0	0		
Benzo(b)fluoranthene	70.67	6.67	66.67	0	106	70	130	0	0		
Benzo(g,h,i)perylene	86	6.67	66.67	0	129	70	130	0	0		
Benzo(k)fluoranthene	63.33	6.67	66.67	0	95	70	130	0	0		
Chrysene	60	6.67	66.67	0	90	70	130	0	0		
Dibenz(a,h)anthracene	85.33	6.67	66.67	0	128	70	130	0	0		
Fluoranthene	72.67	6.67	66.67	0	109	70	130	0	0		
Fluorene	70.67	6.67	66.67	0	106	70	130	0	0		
Indeno(1,2,3-cd)pyrene	86	6.67	66.67	0	129	70	130	0	0		
Naphthalene	68.67	6.67	66.67	0	103	70	130	0	0		
Phenanthrene	66.67	6.67	66.67	0	100	70	130	0	0		
Pyrene	52	6.67	66.67	0	78	70	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

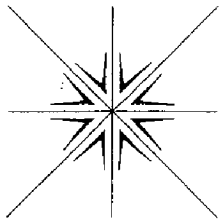
B - Analyte detected in the associated Method Blank

Page 8 of 8

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

INVESTIGATION-DERIVED WASTE



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

March 06, 2006

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACC / 0100.01.02

Dear Anna St. John:

Order No.: 0602115

Specialty Analytical received 1 sample on 2/27/2006 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

AAC000613

Specialty Analytical

Date: 06-Mar-06

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.02

Lab Order: 0602115

Lab ID: 0602115-01
Client Sample ID: Drum Soil 0206

Collection Date: 2/24/2006 11:30:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HCID						
NWHCID						Analyst: mkh
Gasoline	ND	23.8		mg/Kg-dry	1	2/28/2006
Mineral Spirits	ND	23.8		mg/Kg-dry	1	2/28/2006
Kerosene	ND	59.5		mg/Kg-dry	1	2/28/2006
Diesel	ND	59.5		mg/Kg-dry	1	2/28/2006
Lube Oil	ND	119		mg/Kg-dry	1	2/28/2006
Surr: BFB	101	50-150		%REC	1	2/28/2006
Surr: o-Terphenyl	101	50-150		%REC	1	2/28/2006
TCLP METALS						
E1311/6010/7470						Analyst: zau
Arsenic, TCLP	ND	0.100		mg/L	1	3/1/2006 8:27:20 PM
Barium, TCLP	1.71	0.250		mg/L	5	3/2/2006 3:17:01 PM
Cadmium, TCLP	ND	0.00500		mg/L	1	3/1/2006 8:27:20 PM
Chromium, TCLP	ND	0.0250		mg/L	1	3/1/2006 8:27:20 PM
Lead, TCLP	ND	0.100		mg/L	1	3/1/2006 8:27:20 PM
Selenium, TCLP	ND	0.100		mg/L	1	3/1/2006 8:27:20 PM
Silver, TCLP	0.101	0.0500		mg/L	1	3/1/2006 8:27:20 PM
TCLP MERCURY						
1311/7000						Analyst: zau
Mercury, TCLP	ND	0.000100		mg/L	1	3/3/2006

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	MBLK-15293	SampType	MBLK	TestCode	6010_TCLP	Units	mg/L	Prep Date	3/1/2006	Run ID	TJAIRIS_060301B
Client ID	ZZZZZ	Batch ID	15293	TestNo	E1311/6010/7			Analysis Date	3/1/2006	SeqNo	377915
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	ND	0.0200									
Barium, TCLP	ND	0.0100									
Cadmium, TCLP	ND	0.00100									
Chromium, TCLP	ND	0.00500									
Lead, TCLP	ND	0.0200									
Selenium, TCLP	ND	0.0200									
Silver, TCLP	ND	0.0100									

Sample ID	LCS-15293	SampType	LCS	TestCode	6010_TCLP	Units	mg/L	Prep Date	3/1/2006	Run ID	TJAIRIS_060301B
Client ID	ZZZZZ	Batch ID	15293	TestNo	E1311/6010/7			Analysis Date	3/1/2006	SeqNo	377916
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.001	0.0200	1	0	100	93.8	107	0	0		
Barium, TCLP	0.51	0.0100	0.5	0	102	95	111	0	0		
Cadmium, TCLP	0.0503	0.00100	0.05	0	101	91.8	110	0	0		
Chromium, TCLP	0.256	0.00500	0.25	0	102	93.6	113	0	0		
Lead, TCLP	1.011	0.0200	1	0	101	93.1	112	0	0		
Selenium, TCLP	1.001	0.0200	1	0	100	93.9	111	0	0		
Silver, TCLP	0.4642	0.0100	0.5	0	92.8	90.6	115	0	0		

Sample ID	A0602126-01CMS	SampType	MS	TestCode	6010_TCLP	Units	mg/L	Prep Date	3/1/2006	Run ID	TJAIRIS_060301B
Client ID	ZZZZZ	Batch ID	15293	TestNo	E1311/6010/7			Analysis Date	3/1/2006	SeqNo	377919
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.031	0.0200	1	0	103	90.1	110	0	0		
Barium, TCLP	0.5395	0.0100	0.5	0.0202	104	90.7	112	0	0		
Cadmium, TCLP	0.0515	0.00100	0.05	0	103	93.4	110	0	0		
Chromium, TCLP	0.2648	0.00500	0.25	0.0014	105	93.4	112	0	0		
Lead, TCLP	1.05	0.0200	1	0	105	91.9	112	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	A0602126-01CMS	SampType: MS	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/1/2006	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/1/2006	SeqNo: 377919					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium, TCLP	1.022	0.0200	1	0	102	93.5	113	0	0		
Silver, TCLP	0.4629	0.0100	0.5	0	92.6	90.1	113	0	0		

Sample ID	A0602126-01CMSD	SampType: MSD	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/1/2006	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/1/2006	SeqNo: 377920					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.03	0.0200	1	0	103	90.1	110	1.031	0.0970	20	
Barium, TCLP	0.5377	0.0100	0.5	0.0202	104	90.7	112	0.5395	0.334	20	
Cadmium, TCLP	0.0519	0.00100	0.05	0	104	93.4	110	0.0515	0.774	20	
Chromium, TCLP	0.2647	0.00500	0.25	0.0014	105	93.4	112	0.2648	0.0378	20	
Lead, TCLP	1.05	0.0200	1	0	105	91.9	112	1.05	0	20	
Selenium, TCLP	1.029	0.0200	1	0	103	93.5	113	1.022	0.683	20	
Silver, TCLP	0.4523	0.0100	0.5	0	90.5	90.1	113	0.4629	2.32	20	

Sample ID	A0602126-01CDUP	SampType: DUP	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/1/2006	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/1/2006	SeqNo: 377918					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	ND	0.0200	0	0	0	0	0	0	0	20	
Barium, TCLP	0.0204	0.0100	0	0	0	0	0	0.0202	0.985	20	
Cadmium, TCLP	ND	0.00100	0	0	0	0	0	0	0	20	
Chromium, TCLP	0.002	0.00500	0	0	0	0	0	0.0014	0	20	J
Lead, TCLP	ND	0.0200	0	0	0	0	0	0	0	20	
Selenium, TCLP	ND	0.0200	0	0	0	0	0	0	0	20	
Silver, TCLP	ND	0.0100	0	0	0	0	0	0	0	20	

Sample ID	CCV	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/1/2006	SeqNo: 377914					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0602115
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377914
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	0.9418	0.0200	1	0	94.2	90	110	0	0		
Barium, TCLP	0.5054	0.0100	0.5	0	101	90	110	0	0		
Cadmium, TCLP	0.0481	0.00100	0.05	0	96.2	90	110	0	0		
Chromium, TCLP	0.2457	0.00500	0.25	0	98.3	90	110	0	0		
Lead, TCLP	0.9587	0.0200	1	0	95.9	90	110	0	0		
Selenium, TCLP	0.9565	0.0200	1	0	95.6	90	110	0	0		
Silver, TCLP	0.466	0.0100	0.5	0	93.2	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377921
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.058	0.0200	1	0	106	90	110	0	0		
Barium, TCLP	0.5184	0.0100	0.5	0	104	90	110	0	0		
Cadmium, TCLP	0.0523	0.00100	0.05	0	105	90	110	0	0		
Chromium, TCLP	0.2639	0.00500	0.25	0	106	90	110	0	0		
Lead, TCLP	1.058	0.0200	1	0	106	90	110	0	0		
Selenium, TCLP	1.037	0.0200	1	0	104	90	110	0	0		
Silver, TCLP	0.4678	0.0100	0.5	0	93.6	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377925
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.033	0.0200	1	0	103	90	110	0	0		
Barium, TCLP	0.5254	0.0100	0.5	0	105	90	110	0	0		
Cadmium, TCLP	0.0518	0.00100	0.05	0	104	90	110	0	0		
Chromium, TCLP	0.2711	0.00500	0.25	0	108	90	110	0	0		
Lead, TCLP	1.046	0.0200	1	0	105	90	110	0	0		
Selenium, TCLP	1.042	0.0200	1	0	104	90	110	0	0		
Silver, TCLP	0.4655	0.0100	0.5	0	93.1	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	CCV	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/1/2006	SeqNo: 377933					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	0.9861	0.0200	1	0	98.6	90	110	0	0		
Barium, TCLP	0.5302	0.0100	0.5	0	106	90	110	0	0		
Cadmium, TCLP	0.0504	0.00100	0.05	0	101	90	110	0	0		
Chromium, TCLP	0.2733	0.00500	0.25	0	109	90	110	0	0		
Lead, TCLP	1.014	0.0200	1	0	101	90	110	0	0		
Selenium, TCLP	1.017	0.0200	1	0	102	90	110	0	0		
Silver, TCLP	0.4632	0.0100	0.5	0	92.6	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/2/2006	SeqNo: 378130					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	0.485	0.0100	0.5	0	97	90	110	0	0		
Lead, TCLP	0.9708	0.0200	1	0	97.1	90	110	0	0		
Silver, TCLP	0.4511	0.0100	0.5	0	90.2	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/2/2006	SeqNo: 378135					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	0.4868	0.0100	0.5	0	97.4	90	110	0	0		
Lead, TCLP	0.9674	0.0200	1	0	96.7	90	110	0	0		
Silver, TCLP	0.4573	0.0100	0.5	0	91.5	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJAIRIS_060301B					
Client ID:	ZZZZZ	Batch ID: 15293	TestNo: E1311/6010/7		Analysis Date: 3/2/2006	SeqNo: 378137					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	0.5003	0.0100	0.5	0	100	90	110	0	0		
Lead, TCLP	0.9989	0.0200	1	0	99.9	90	110	0	0		
Silver, TCLP	0.4656	0.0100	0.5	0	93.1	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	ICV	SampType:	ICV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377913
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.023	0.0200	1	0	102	90	110	0	0		
Barium, TCLP	0.5095	0.0100	0.5	0	102	90	110	0	0		
Cadmium, TCLP	0.0514	0.00100	0.05	0	103	90	110	0	0		
Chromium, TCLP	0.2526	0.00500	0.25	0	101	90	110	0	0		
Lead, TCLP	1.023	0.0200	1	0	102	90	110	0	0		
Selenium, TCLP	1.003	0.0200	1	0	100	90	110	0	0		
Silver, TCLP	0.4767	0.0100	0.5	0	95.3	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/2/2006	SeqNo:	378129
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	0.4984	0.0100	0.5	0	99.7	90	110	0	0		
Lead, TCLP	0.994	0.0200	1	0	99.4	90	110	0	0		
Silver, TCLP	0.4649	0.0100	0.5	0	93	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 9

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HCID_NW

Sample ID	MBLK	SampType:	MBLK	TestCode:	HCID_NW	Units:	mg/Kg	Prep Date:	2/28/2006	Run ID:	GC-M_060228A
Client ID:	ZZZZZ	Batch ID:	15269	TestNo:	NWHCID			Analysis Date:	2/28/2006	SeqNo:	377337
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	8.85	20.0									J
Mineral Spirits	ND	20.0									
Kerosene	ND	50.0									
Diesel	ND	50.0									
Lube Oil	ND	100									
Surr: BFB	109	0	100	0	109	50	150	0	0		
Surr: o-Terphenyl	100	0	100	0	100	50	150	0	0		

Sample ID	0602115-01ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	2/28/2006	Run ID:	GC-M_060228A
Client ID:	Drum Soil 0206	Batch ID:	15269	TestNo:	NWHCID			Analysis Date:	2/28/2006	SeqNo:	377339
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	8.264	23.8	0	0	0	0	0	9.215	0	20	J
Mineral Spirits	ND	23.8	0	0	0	0	0	0	0	20	
Kerosene	ND	59.5	0	0	0	0	0	0	0	20	
Diesel	25.45	59.5	0	0	0	0	0	22.47	0	20	J
Lube Oil	109.3	119	0	0	0	0	0	94.41	0	20	J

Sample ID	0602119-01ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	2/28/2006	Run ID:	GC-M_060228A
Client ID:	ZZZZZ	Batch ID:	15269	TestNo:	NWHCID			Analysis Date:	2/28/2006	SeqNo:	377341
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	9.352	25.4	0	0	0	0	0	9.352	0	20	J
Mineral Spirits	ND	25.4	0	0	0	0	0	0	0	20	
Kerosene	ND	63.5	0	0	0	0	0	0	0	20	
Diesel	ND	63.5	0	0	0	0	0	0	0	20	
Lube Oil	ND	127	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0602115
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HCID_NW

Sample ID	0602124-01ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	2/28/2006	Run ID:	GC-M_060228A
Client ID:	ZZZZZ	Batch ID:	15269	TestNo:	NWHCID			Analysis Date:	2/28/2006	SeqNo:	377348
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	11.79	35.8	0	0	0	0	0	13.86	0	20	J
Mineral Spirits	ND	35.8	0	0	0	0	0	0	0	20	
Kerosene	ND	89.4	0	0	0	0	0	0	0	20	
Diesel	ND	89.4	0	0	0	0	0	0	0	20	
Lube Oil	ND	179	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 7 of 9

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
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ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID	MB-15311	SampType: MBLK	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C					
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378412						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury, TCLP ND 0.000100

Sample ID	LCS-15311	SampType: LCS	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C					
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000	Analysis Date: 3/3/2006	SeqNo: 378411							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury, TCLP 0.004288 0.000100 0.004 0 107 85.4 116 0 0

Sample ID	A0603008-01CMS	SampType: MS	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C					
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000	Analysis Date: 3/3/2006	SeqNo: 378408							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.004447 0.000100 0.004 0.0002404 105 69.5 125 0 0

Sample ID	A0603008-01CMSD	SampType: MSD	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C					
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000	Analysis Date: 3/3/2006	SeqNo: 378409							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.004194 0.000100 0.004 0.0002404 98.8 69.5 125 0.004447 5.86 20

Sample ID	A0603008-01CDUP	SampType: DUP	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C					
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000	Analysis Date: 3/3/2006	SeqNo: 378407							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.0001385 0.000100 0 0 0 0 0 0.0002404 53.8 20 RF

Sample ID	CCV	SampType: CCV	TestCode: HG_TCLP	Units: mg/L	Prep Date:	Run ID: CVAA_060303C					
Client ID:	ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378410					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 8 of 9

CLIENT: Maul, Foster & Alongi
Work Order: 0602115
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID	CCV	SampType	CCV	TestCode	HG_TCLP	Units	mg/L	Prep Date:		Run ID:	CVAA_060303C			
Client ID:	ZZZZZ	Batch ID:	15311	TestNo:	1311/7000			Analysis Date:	3/3/2006	SeqNo:	378410			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury,TCLP		0.004278		0.000100	0.004	0		107	90	110	0		0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

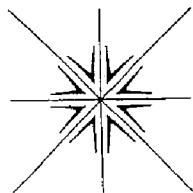
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 9 of 9

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.



Specialty Analytical

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Signature.

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Signature.

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Turn Around Time

 Normal

☐ Rush

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

CHAIN OF CUSTODY RECORD

Page ____ of ____

Contact Person/Project Manager ANNA STJOHN

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Phone 975-544-2139 Fax 975-544-2140

Project No. 0100.01.02 Project Name AACC

Invoice To _____ P.O. No. _____

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AAC000625

APPENDIX D
DATA VALIDATION

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

ADVANCED AMERICAN CONSTRUCTION PROPERTIES

December 2004

0100.01.02

This report reviews the analytical results for soil samples collected on the Advanced American Construction Properties site at 8444 NW St. Helens Road in Portland, Oregon. The samples were collected in December 2004.

Specialty Analytical (SA), in Tualatin, Oregon, performed the analyses. SA report number 0412146 was reviewed. The analyses performed are listed below.

Analysis	Reference
Polycyclic aromatic hydrocarbons	USEPA 8270-SIM
Total metals	USEPA 6010
Diesel and lube oil	NWTPH-Dx
Gasoline	NWTPH-Gx

USEPA = U.S. Environmental Protection Agency.
NWTPH= Northwest Total Petroleum Hydrocarbons.
SIM = selected ion monitoring.

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 1994, 1999), and appropriate laboratory and method-specific guidelines (SA, 2004; USEPA, 1986). Data-validation procedures were modified, as appropriate, to accommodate quality-control requirements for methods not specifically addressed by the functional guidelines (i.e., hydrocarbon analyses and conventional parameter analyses).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Holding Times, Preservation, and Sample Storage

Holding Times

Extractions and analyses were performed within the recommended holding-time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Blanks

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. No target analytes were detected above the SA method reporting limits (MRLs).

Surrogate Recovery Results

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. The reviewer took no action based on minor surrogate outliers or surrogate percent recoveries that were outside of acceptance limits due to dilutions necessary to quantify high concentrations of target analytes present in the samples.

Matrix Spike/Matrix Spike Duplicate Results

Matrix spike/matrix spike duplicate (MS/MSD) results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. All percent recoveries and relative percent differences (RPDs) were within acceptance limits.

Laboratory Control Sample Results

A laboratory control sample (LCS) is spiked with target analytes to provide information on laboratory accuracy. The LCS samples were extracted and analyzed at the required frequency. All LCS analytes were within acceptance limits for percent recovery.

Laboratory Duplicate Results

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. All RPDs were within acceptance limits.

Field Duplicate Results

Field duplicate samples were not analyzed for this location.

Method Reporting Limits

SA used routine MRLs for nondetect results, with the exception of samples requiring dilutions due to high analyte concentrations and/or matrix interferences.

Data Package

The data packages were reviewed for transcription errors, omissions, or anomalies. None were found.

REFERENCES

- SA. 2004. Quality assurance manual. Specialty Analytical, Tualatin, Oregon.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).
- USEPA. 1994. USEPA contract laboratory program, national functional guidelines for inorganics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA 540/R-94/013. February.
- USEPA. 1999. USEPA contract laboratory program, national functional guidelines for organics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA 540/R-99/008. October.

APPENDIX E

WASTE MANIFESTS AND DISPOSAL RECEIPTS

Hillsboro Landfill, Inc.

3205 SE MINTER BRIDGE ROAD HILLSBORO, OR 97123

PERMIT # 9087

PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS

This permit authorizes disposal of Customer's waste materials in accordance with the Industrial Waste & Disposal Services Agreement dated 8/05.

EXPIRES: 6/20/06

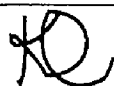
GENERATOR: ADVANCED AMERICAN CONSTRUCTION

DESCRIPTION: PCS		TONS: 1200
<input type="checkbox"/> SPECIAL WASTE	<input checked="" type="checkbox"/> CS	<input type="checkbox"/> CLEAN-UP MATERIAL
LOCATION: PORTLAND, OREGON		COUNTY: Multnomah
CONTACT: SCOTT BURGESS		PHONE: 503-650-8207
		FAX: 503-650-8230

BILLING: Landfill account ADVANCED AMERICAN CONSTRUCTION	PO#: N/A	JOB#: N/A
----------------------------------------------------------	----------	-----------

We accept business checks, cash, VISA / Mastercard or charge(with prior approval)

SPECIAL HANDLING : NONE:	
HAULER: SECURED RESOURCE TRANS.	
MK	TyT

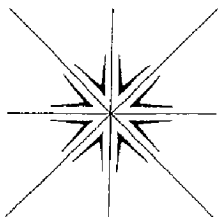
APPROVED: 	KRISTIN CASTNER	DATE: 03/20/06 5:04:46 PM
-----------------------------------------------------------------------------------------------	-----------------	---------------------------

A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

THERE IS A MINIMUM CHARGE OF \$50-\$60 FOR EACH LOAD OF SPECIAL WASTE



WASTE MANAGEMENT
HAZARDOUS WASTE IS STRICTLY PROHIBITED



Specialty Analytical

19761 S.W. 95th Avenue
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

March 06, 2006

Anna St. John
Maul, Foster & Alongi
3121 SW Moody Avenue
Suite 200
Portland, OR 97201

TEL: (971) 544-2139

FAX (971) 544-2140

RE: AACC / 0100.01.02

Dear Anna St. John:

Order No.: 0602115

Specialty Analytical received 1 sample on 2/27/2006 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical, An Oregon Corporation

AAC000635

Specialty Analytical

Date: 06-Mar-06

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.02

Lab Order: 0602115

Lab ID: 0602115-01
Client Sample ID: Drum Soil 0206

Collection Date: 2/24/2006 11:30:00 AM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HCID						
		NWHCID				Analyst: mkh
Gasoline	ND	23.8		mg/Kg-dry	1	2/28/2006
Mineral Spirits	ND	23.8		mg/Kg-dry	1	2/28/2006
Kerosene	ND	59.5		mg/Kg-dry	1	2/28/2006
Diesel	ND	59.5		mg/Kg-dry	1	2/28/2006
Lube Oil	ND	119		mg/Kg-dry	1	2/28/2006
Surr: BFB	101	50-150		%REC	1	2/28/2006
Surr: o-Terphenyl	101	50-150		%REC	1	2/28/2006
TCLP METALS						
		E1311/6010/7470				Analyst: zau
Arsenic, TCLP	ND	0.100		mg/L	1	3/1/2006 8:27:20 PM
Barium, TCLP	1.71	0.250		mg/L	5	3/2/2006 3:17:01 PM
Cadmium, TCLP	ND	0.00500		mg/L	1	3/1/2006 8:27:20 PM
Chromium, TCLP	ND	0.0250		mg/L	1	3/1/2006 8:27:20 PM
Lead, TCLP	ND	0.100		mg/L	1	3/1/2006 8:27:20 PM
Selenium, TCLP	ND	0.100		mg/L	1	3/1/2006 8:27:20 PM
Silver, TCLP	0.101	0.0500		mg/L	1	3/1/2006 8:27:20 PM
TCLP MERCURY						
		1311/7000				Analyst: zau
Mercury, TCLP	ND	0.000100		mg/L	1	3/3/2006

Specialty Analytical

Date: 06-Mar-06

CLIENT: Maul, Foster & Alongi

WorkOrder: 0602115

Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	MBLK-15293	SampType:	MBLK	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377915
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	ND	0.0200									
Barium, TCLP	ND	0.0100									
Cadmium, TCLP	ND	0.00100									
Chromium, TCLP	ND	0.00500									
Lead, TCLP	ND	0.0200									
Selenium, TCLP	ND	0.0200									
Silver, TCLP	ND	0.0100									

Sample ID	LCS-15293	SampType:	LCS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377916
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.001	0.0200	1	0	100	93.8	107	0	0		
Barium, TCLP	0.51	0.0100	0.5	0	102	95	111	0	0		
Cadmium, TCLP	0.0503	0.00100	0.05	0	101	91.8	110	0	0		
Chromium, TCLP	0.256	0.00500	0.25	0	102	93.6	113	0	0		
Lead, TCLP	1.011	0.0200	1	0	101	93.1	112	0	0		
Selenium, TCLP	1.001	0.0200	1	0	100	93.9	111	0	0		
Silver, TCLP	0.4642	0.0100	0.5	0	92.8	90.6	115	0	0		

Sample ID	A0602126-01CMS	SampType:	MS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377919
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.031	0.0200	1	0	103	90.1	110	0	0		
Barium, TCLP	0.5395	0.0100	0.5	0.0202	104	90.7	112	0	0		
Cadmium, TCLP	0.0515	0.00100	0.05	0	103	93.4	110	0	0		
Chromium, TCLP	0.2648	0.00500	0.25	0.0014	105	93.4	112	0	0		
Lead, TCLP	1.05	0.0200	1	0	105	91.9	112	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 1 of 9

AAC000637

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	A0602126-01CMS	SampType:	MS	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	RunID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377919
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium, TCLP	1.022	0.0200	1	0	102	93.5	113	0	0		
Silver, TCLP	0.4629	0.0100	0.5	0	92.6	90.1	113	0	0		

Sample ID	A0602126-01CMSD	SampType:	MSD	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	RunID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377920
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	1.03	0.0200	1	0	103	90.1	110	1.031	0.0970	20	
Barium, TCLP	0.5377	0.0100	0.5	0.0202	104	90.7	112	0.5395	0.334	20	
Cadmium, TCLP	0.0519	0.00100	0.05	0	104	93.4	110	0.0515	0.774	20	
Chromium, TCLP	0.2647	0.00500	0.25	0.0014	105	93.4	112	0.2648	0.0378	20	
Lead, TCLP	1.05	0.0200	1	0	105	91.9	112	1.05	0	20	
Selenium, TCLP	1.029	0.0200	1	0	103	93.5	113	1.022	0.683	20	
Silver, TCLP	0.4523	0.0100	0.5	0	90.5	90.1	113	0.4629	2.32	20	

Sample ID	A0602126-01CDUP	SampType:	DUP	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	RunID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377918
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic, TCLP	ND	0.0200	0	0	0	0	0	0	0	20	
Barium, TCLP	0.0204	0.0100	0	0	0	0	0	0.0202	0.985	20	
Cadmium, TCLP	ND	0.00100	0	0	0	0	0	0	0	20	
Chromium, TCLP	0.002	0.00500	0	0	0	0	0	0.0014	0	20	J
Lead, TCLP	ND	0.0200	0	0	0	0	0	0	0	20	
Selenium, TCLP	ND	0.0200	0	0	0	0	0	0	0	20	
Silver, TCLP	ND	0.0100	0	0	0	0	0	0	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		RunID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377914
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0602115
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377914
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	0.9418	0.0200	1	0	94.2	90	110	0	0		
Barium, TCLP	0.5054	0.0100	0.5	0	101	90	110	0	0		
Cadmium, TCLP	0.0481	0.00100	0.05	0	96.2	90	110	0	0		
Chromium, TCLP	0.2457	0.00500	0.25	0	98.3	90	110	0	0		
Lead, TCLP	0.9587	0.0200	1	0	95.9	90	110	0	0		
Selenium, TCLP	0.9565	0.0200	1	0	95.6	90	110	0	0		
Silver, TCLP	0.466	0.0100	0.5	0	93.2	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:	3/1/2006	Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377921
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.058	0.0200	1	0	106	90	110	0	0		
Barium, TCLP	0.5184	0.0100	0.5	0	104	90	110	0	0		
Cadmium, TCLP	0.0523	0.00100	0.05	0	105	90	110	0	0		
Chromium, TCLP	0.2639	0.00500	0.25	0	106	90	110	0	0		
Lead, TCLP	1.058	0.0200	1	0	106	90	110	0	0		
Selenium, TCLP	1.037	0.0200	1	0	104	90	110	0	0		
Silver, TCLP	0.4678	0.0100	0.5	0	93.6	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377925
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.033	0.0200	1	0	103	90	110	0	0		
Barium, TCLP	0.5254	0.0100	0.5	0	105	90	110	0	0		
Cadmium, TCLP	0.0518	0.00100	0.05	0	104	90	110	0	0		
Chromium, TCLP	0.2711	0.00500	0.25	0	108	90	110	0	0		
Lead, TCLP	1.046	0.0200	1	0	105	90	110	0	0		
Selenium, TCLP	1.042	0.0200	1	0	104	90	110	0	0		
Silver, TCLP	0.4655	0.0100	0.5	0	93.1	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		RunID:	TJAIRIS_060301B	
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			AnalysisDate:	3/1/2006	SeqNo:	377933	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP		0.9861	0.0200	1	0	98.6	90	110	0	0		
Barium, TCLP		0.5302	0.0100	0.5	0	106	90	110	0	0		
Cadmium, TCLP		0.0504	0.00100	0.05	0	101	90	110	0	0		
Chromium, TCLP		0.2733	0.00500	0.25	0	109	90	110	0	0		
Lead, TCLP		1.014	0.0200	1	0	101	90	110	0	0		
Selenium, TCLP		1.017	0.0200	1	0	102	90	110	0	0		
Silver, TCLP		0.4632	0.0100	0.5	0	92.6	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		RunID:	TJAIRIS_060301B	
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			AnalysisDate:	3/2/2006	SeqNo:	378130	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP		0.485	0.0100	0.5	0	97	90	110	0	0		
Lead, TCLP		0.9708	0.0200	1	0	97.1	90	110	0	0		
Silver, TCLP		0.4511	0.0100	0.5	0	90.2	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		RunID:	TJAIRIS_060301B	
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			AnalysisDate:	3/2/2006	SeqNo:	378135	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP		0.4868	0.0100	0.5	0	97.4	90	110	0	0		
Lead, TCLP		0.9674	0.0200	1	0	96.7	90	110	0	0		
Silver, TCLP		0.4573	0.0100	0.5	0	91.5	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		RunID:	TJAIRIS_060301B	
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			AnalysisDate:	3/2/2006	SeqNo:	378137	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP		0.5003	0.0100	0.5	0	100	90	110	0	0		
Lead, TCLP		0.9989	0.0200	1	0	99.9	90	110	0	0		
Silver, TCLP		0.4656	0.0100	0.5	0	93.1	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_TCLP

Sample ID	ICV	SampType:	ICV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/1/2006	SeqNo:	377913
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic, TCLP	1.023	0.0200	1	0	102	90	110	0	0		
Barium, TCLP	0.5095	0.0100	0.5	0	102	90	110	0	0		
Cadmium, TCLP	0.0514	0.00100	0.05	0	103	90	110	0	0		
Chromium, TCLP	0.2526	0.00500	0.25	0	101	90	110	0	0		
Lead, TCLP	1.023	0.0200	1	0	102	90	110	0	0		
Selenium, TCLP	1.003	0.0200	1	0	100	90	110	0	0		
Silver, TCLP	0.4767	0.0100	0.5	0	95.3	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_TCLP	Units:	mg/L	Prep Date:		Run ID:	TJAIRIS_060301B
Client ID:	ZZZZZ	Batch ID:	15293	TestNo:	E1311/6010/7			Analysis Date:	3/2/2006	SeqNo:	378129
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium, TCLP	0.4984	0.0100	0.5	0	99.7	90	110	0	0		
Lead, TCLP	0.994	0.0200	1	0	99.4	90	110	0	0		
Silver, TCLP	0.4649	0.0100	0.5	0	93	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 5 of 9

CLIENT: Maul, Foster & Alongi
 Work Order: 0602115
 Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HCID_NW

Sample ID	MBLK	Samp Type:	MBLK	Test Code:	HCID_NW	Units:	mg/Kg	Prep Date:	2/28/2006	Run ID:	GC-M_060228A	
Client ID:	ZZZZZ	Batch ID:	15269	Test No:	NWHCID			Analysis Date:	2/28/2006	Seq No:	377337	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		8.85	20.0									J
Mineral Spirits		ND	20.0									
Kerosene		ND	50.0									
Diesel		ND	50.0									
Lube Oil		ND	100									
Surr: BFB		109	0	100	0	109	50	150	0	0		
Surr: o-Terphenyl		100	0	100	0	100	50	150	0	0		

Sample ID	0602115-01ADUP	SampType: DUP	TestCode: HCID_NW	Units: mg/Kg-dry	Prep Date: 2/28/2006	Run ID: GC-M_060228A					
Client ID:	Drum Soil 0206	Batch ID: 15269	TestNo: NWHCID		Analysis Date: 2/28/2006	SeqNo: 377339					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	8.264	23.8	0	0	0	0	0	9.215	0	20	J
Mineral Spirits	ND	23.8	0	0	0	0	0	0	0	20	
Kerosene	ND	59.5	0	0	0	0	0	0	0	20	
Diesel	25.45	59.5	0	0	0	0	0	22.47	0	20	J
Lube Oil	109.3	119	0	0	0	0	0	94.41	0	20	J

Sample ID	0602119-01ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	2/28/2006	Run ID:	GC-M_060228A
Client ID:	ZZZZZ	Batch ID:	15269	TestNo:	NWHCID			Analysis Date:	2/28/2006	SeqNo:	377341
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	9.352	25.4	0	0	0	0	0	9.352	0	20	J
Mineral Spirits	ND	25.4	0	0	0	0	0	0	0	20	
Kerosene	ND	63.5	0	0	0	0	0	0	0	20	
Diesel	ND	63.5	0	0	0	0	0	0	0	20	
Lube Oil	ND	127	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0602115
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HCID_NW

Sample ID	0602124-01ADUP	SampType:	DUP	TestCode:	HCID_NW	Units:	mg/Kg-dry	Prep Date:	2/28/2006	Run ID:	GC-M_060228A	
Client ID:	ZZZZZ	Batch ID:	15269	TestNo:	NWHCID			Analysis Date:	2/28/2006	SeqNo:	377348	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		11.79	35.8	0	0	0	0	0	13.86	0	20	J
Mineral Spirits		ND	35.8	0	0	0	0	0	0	0	20	
Kerosene		ND	89.4	0	0	0	0	0	0	0	20	
Diesel		ND	89.4	0	0	0	0	0	0	0	20	
Lube Oil		ND	179	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 7 of 9

CLIENT: Maul, Foster & Alongi
 WorkOrder: 0602115
 Project: AACC/0100:01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID MB-15311	SampType: MBLK	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C						
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378412						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, TCLP	ND	0.000100									

Sample ID LCS-15311	SampType: LCS	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C						
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378411						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, TCLP	0.004288	0.000100	0.004	0	107	85.4	116	0	0		

Sample ID A0603008-01CMS	SampType: MS	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C						
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378408						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004447	0.000100	0.004	0.0002404	105	69.5	125	0	0		

Sample ID A0603008-01CMSD	SampType: MSD	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C						
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378409						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004194	0.000100	0.004	0.0002404	98.8	69.5	125	0.004447	5.86	20	

Sample ID A0603008-01CDUP	SampType: DUP	TestCode: HG_TCLP	Units: mg/L	Prep Date: 3/3/2006	Run ID: CVAA_060303C						
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378407						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0001385	0.000100	0	0	0	0	0	0.0002404	53.8	20	RF

Sample ID CCV	SampType: CCV	TestCode: HG_TCLP	Units: mg/L	Prep Date:	Run ID: CVAA_060303C						
Client ID: ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378410						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
WorkOrder: 0602115
Project: AACC/0100.01.02

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_TCLP

Sample ID	CCV	SampType: CCV	TestCode: HG_TCLP	Units: mg/L	Prep Date:	Run ID: CVAA_060303C					
Client ID:	ZZZZZ	Batch ID: 15311	TestNo: 1311/7000		Analysis Date: 3/3/2006	SeqNo: 378410					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury, TCLP	0.004278	0.000100	0.004	0	107	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

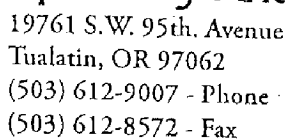
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 9 of 9

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result greater than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- H Sample was analyzed outside recommended hold time.
- HT At clients request, sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- N Gasoline result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits, post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

Page of

Contact Person/Project Manager ANNA ST JOHN
Company MAUL FOSTER & ALONGI
Address 3121 SW MOODY AVE STE 200
PORTLAND OR 97239
Phone 975-544-2139 Fax 975-544-2140
Project No. 0100.01.02 Project Name AACC
Invoice To _____ P.O. No. _____

Collected By:

Signature Kenneth J. Davis

Printed Russell G ADAMS

Signature_____

Printed _____

Turn Around Time

☒ Normal

☐ Rush

Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

AAC000647

WASTE MANAGEMENT, INC.NON HAZARDOUS WASTE DISPOSAL SOLUTIONS FOR THE PACIFIC NORTHWEST

Hillsboro Landfill, Inc.

3205 SE MINTER BRIDGE ROAD HILLSBORO, OR 97123


PERMIT # 9087**PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS**This permit authorizes disposal of Customer's waste materials in accordance with the Industrial Waste & Disposal Services Agreement dated 8/05**EXPIRES: 11/8/05****GENERATOR: ADVANCED AMERICAN
CONSTRUCTION**

DESCRIPTION: PCS		TONS: 1200
<input type="checkbox"/> SPECIAL WASTE	<input checked="" type="checkbox"/> CS	<input type="checkbox"/> CLEAN-UP MATERIAL
LOCATION: PORTLAND, OREGON		COUNTY: Multnomah
CONTACT: SCOTT BURGESS		PHONE: 503-650-8207
		FAX: 503-650-8230

BILLING: Landfill account ADVANCED AMERICAN CONSTRUCTION	PO#: N/A	JOB#: N/A
-----------------------------------------------------------------	-----------------	------------------

We accept business checks, cash, VISA / Mastercard or charge (with prior approval)

SPECIAL HANDLING : NONE:	
HAULER: SECURED RESOURCE TRANS.	
MK	TyT

APPROVED:		KRISTIN CASTNER	DATE: 08/19/05 4:37:36 PM
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A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

THERE IS A MINIMUM CHARGE OF \$50-\$60 FOR EACH LOAD OF SPECIAL WASTE

**WASTE MANAGEMENT**
HAZARDOUS WASTE IS STRICTLY PROHIBITED

Specialty Analytical

Date:

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0508078

Lab ID: 0508078-01

Collection Date: 8/18/2005 9:45:00 AM

Client Sample ID: P3-081805

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HCID						
			NWHCID		Analyst: das	
Gasoline	ND	21.6		mg/Kg-dry	1	8/18/2005
Mineral Spirits	ND	21.6		mg/Kg-dry	1	8/18/2005
Kerosene	ND	53.9		mg/Kg-dry	1	8/18/2005
Diesel	ND	53.9		mg/Kg-dry	1	8/18/2005
Lube Oil	Lube Oil	108		mg/Kg-dry	1	8/18/2005
Surr: BFB	83.5	50-150		%REC	1	8/18/2005
Surr: o-Terphenyl	96.6	50-150		%REC	1	8/18/2005
NWTPH-DX						
			NWTPH-DX		Analyst: das	
Diesel	ND	16.2	A3	mg/Kg-dry	1	8/18/2005
Lube Oil	395	53.9	A2	mg/Kg-dry	1	8/18/2005
Surr: o-Terphenyl	105	50-150		%REC	1	8/18/2005
TCLP METALS						
			E1311/6010/7470		Analyst: zau	
Arsenic, TCLP	ND	0.100		mg/L	1	8/19/2005 2:36:55 PM
Barium, TCLP	3.42	0.250		mg/L	5	8/19/2005 2:47:36 PM
Cadmium, TCLP	0.00750	0.00500		mg/L	1	8/19/2005 2:36:55 PM
Chromium, TCLP	0.0405	0.0250		mg/L	1	8/19/2005 2:36:55 PM
Lead, TCLP	ND	0.100		mg/L	1	8/19/2005 2:36:55 PM
Selenium, TCLP	ND	0.100		mg/L	1	8/19/2005 2:36:55 PM
Silver, TCLP	ND	0.0500		mg/L	1	8/19/2005 2:36:55 PM
TCLP MERCURY						
			1311/7000		Analyst: zau	
Mercury, TCLP	ND	0.000100		mg/L	1	8/19/2005

Specialty Analytical

Date:

CLIENT: Maul, Foster & Alongi
Project: AACP / 0100.01.02

Lab Order: 0508078

Lab ID: 0508078-02

Collection Date: 8/18/2005 9:50:00 AM

Client Sample ID: P4-081805

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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NWTPH-HCID

NWHCID

Analyst: das

Gasoline	ND	20.8		mg/Kg-dry	1	8/18/2005
Mineral Spirits	ND	20.8		mg/Kg-dry	1	8/18/2005
Kerosene	ND	52.1		mg/Kg-dry	1	8/18/2005
Diesel	ND	52.1		mg/Kg-dry	1	8/18/2005
Lube Oil	Lube Oil	104		mg/Kg-dry	1	8/18/2005
Surr: BFB	81.9	50-150		%REC	1	8/18/2005
Surr: o-Terphenyl	94.4	50-150		%REC	1	8/18/2005

NWTPH-DX

NWTPH-DX

Analyst: das

Diesel	ND	15.6	A3	mg/Kg-dry	1	8/18/2005
Lube Oil	326	52.1	A2	mg/Kg-dry	1	8/18/2005
Surr: o-Terphenyl	111	50-150		%REC	1	8/18/2005

TCLP METALS

E1311/6010/7470

Analyst: zau

Arsenic, TCLP	ND	0.100		mg/L	1	8/19/2005 2:42:15 PM
Barium, TCLP	2.83	0.250		mg/L	5	8/19/2005 2:52:59 PM
Cadmium, TCLP	0.00550	0.00500		mg/L	1	8/19/2005 2:42:15 PM
Chromium, TCLP	0.0250	0.0250		mg/L	1	8/19/2005 2:42:15 PM
Lead, TCLP	ND	0.100		mg/L	1	8/19/2005 2:42:15 PM
Selenium, TCLP	ND	0.100		mg/L	1	8/19/2005 2:42:15 PM
Silver, TCLP	ND	0.0500		mg/L	1	8/19/2005 2:42:15 PM

TCLP MERCURY

1311/7000

Analyst: zau

Mercury, TCLP	ND	0.000100		mg/L	1	8/19/2005
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WASTE MANAGEMENT, INC.NON HAZARDOUS WASTE DISPOSAL SOLUTIONS FOR THE PACIFIC NORTHWEST

Hillsboro Landfill, Inc.

3205 SE MINTER BRIDGE ROAD HILLSBORO, OR 97123


PERMIT # 9087**PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS**

This permit authorizes disposal of Customer's waste materials in accordance with the Industrial

Waste & Disposal Services Agreement dated 8/05**EXPIRES: 11/8/05****GENERATOR: ADVANCED AMERICAN
CONSTRUCTION**

DESCRIPTION: PCS		TONS: 400
<input type="checkbox"/> SPECIAL WASTE	<input checked="" type="checkbox"/> CS	<input type="checkbox"/> CLEAN-UP MATERIAL
LOCATION: PORTLAND, OREGON		COUNTY: Multnomah
CONTACT: SCOTT BURGESS		PHONE: 503-650-8207
		FAX: 503-650-8230

BILLING: Landfill account ADVANCED AMERICAN CONSTRUCTION	PO#: N/A	JOB#: N/A
------------------------------------------------------------------------	-----------------	------------------

*We accept business checks, cash, VISA / Mastercard or charge (with prior approval)***SPECIAL HANDLING : NONE:**
HAULER: SECURED RESOURCE TRANS.**MK****TyT****APPROVED:****KRISTIN CASTNER****DATE: 08/08/05 11:18:18 AM****A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER****THERE IS A MINIMUM CHARGE OF \$50-\$60 FOR EACH LOAD OF SPECIAL WASTE****WASTE MANAGEMENT****HAZARDOUS WASTE IS STRICTLY PROHIBITED***7/11/05*

Specialty Analytical

Date: 7-29-05

CLIENT: Maul, Foster & Alongi
Lab Order: 0507080
Project: AAC Scraping / 0100.01.02
Lab ID: 0507080-01

Client Sample ID: P1
Collection Date: 7/19/2005 11:39:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HC1D						
			NWHCID		Analyst: das	
Gasoline	ND	20.6		mg/Kg-dry	1	7/21/2005
Mineral Spirits	ND	20.6		mg/Kg-dry	1	7/21/2005
Kerosene	ND	51.5		mg/Kg-dry	1	7/21/2005
Diesel	ND	51.5		mg/Kg-dry	1	7/21/2005
Lube Oil	Lube Oil	103		mg/Kg-dry	1	7/21/2005
Surr: BFB	77.4	50-150		%REC	1	7/21/2005
Surr: o-Terphenyl	88.7	50-150		%REC	1	7/21/2005
NWTPH-DX						
			NWTPH-DX		Analyst: das	
Diesel	135	15.4	A1,K	mg/Kg-dry	1	7/23/2005
Lube Oil	629	51.5		mg/Kg-dry	1	7/23/2005
Surr: o-Terphenyl	81.0	50-150		%REC	1	7/23/2005
TOTAL METALS BY ICP						
			E6010		Analyst: zau	
Arsenic	26.4	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
Barium	117	2.00		mg/Kg	2	7/22/2005 5:16:55 PM
Cadmium	1.03	0.100		mg/Kg	1	7/21/2005 5:31:43 PM
Chromium	80.6	1.00		mg/Kg	2	7/22/2005 5:16:55 PM
Lead	159	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
Selenium	ND	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
Silver	ND	2.00		mg/Kg	1	7/21/2005 5:31:43 PM
TCLP METALS						
			E1311/6010/7470		Analyst: zau	
Lead, TCLP	ND	0.0200		mg/L	1	7/28/2005 11:33:31 AM
MERCURY, TOTAL						
			SW7471		Analyst: zau	
Mercury	0.0484	0.0143		mg/Kg	1	7/22/2005
VOLATILES BY GC/MS						
			SW8260B		Analyst: seb	
1,1,1,2-Tetrachloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1,1-Trichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1,2,2-Tetrachloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1,2-Trichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1-Dichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1-Dichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,1-Dichloropropene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,3-Trichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,3-Trichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,4-Trichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2,4-Trimethylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dibromo-3-chloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dibromoethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM

PRELIMINARY

Specialty Analytical

Date: 7-29-05

CLIENT: Maul, Foster & Alongi

Client Sample ID: P1

Lab Order: 0507080

Collection Date: 7/19/2005 11:39:00 AM

Project: AAC Scraping / 0100.01.02

Lab ID: 0507080-01

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		SW8260B		Analyst: seb		
1,2-Dichloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,2-Dichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,3,5-Trimethylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,3-Dichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,3-Dichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
1,4-Dichlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
2,2-Dichloropropane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
2-Butanone	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
2-Chlorotoluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
2-Hexanone	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
4-Chlorotoluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
4-Isopropyltoluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
4-Methyl-2-pentanone	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
Acetone	ND	50.0		µg/Kg	1	7/22/2005 9:24:00 AM
Benzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromochloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromodichloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromoform	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Bromomethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Carbon disulfide	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Carbon tetrachloride	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chlorobenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chloroethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chloroform	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Chloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
cis-1,2-Dichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
cis-1,3-Dichloropropene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Dibromochloromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Dibromomethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Dichlorodifluoromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Ethylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Hexachlorobutadiene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Isopropylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
m,p-Xylene	ND	20.0		µg/Kg	1	7/22/2005 9:24:00 AM
Methyl tert-butyl ether	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Methylene chloride	ND	50.0		µg/Kg	1	7/22/2005 9:24:00 AM
n-Butylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
n-Propylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Naphthalene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
o-Xylene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM

PRELIMINARY

Specialty Analytical

Date: 7-19-05

CLIENT: Maul, Foster & Alongi
Lab Order: 0507080
Project: AAC Scraping / 0100.01.02
Lab ID: 0507080-01

Client Sample ID: P1
Collection Date: 7/19/2005 11:39:00 AM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		SW8260B		Analyst: seb		
sec-Butylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Styrene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
tert-Butylbenzene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Tetrachloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Toluene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
trans-1,2-Dichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
trans-1,3-Dichloropropene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Trichloroethene	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Trichlorofluoromethane	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Vinyl chloride	ND	10.0		µg/Kg	1	7/22/2005 9:24:00 AM
Surr: 1,2-Dichloroethane-d4	79.2	71.5-112		%REC	1	7/22/2005 9:24:00 AM
Surr: 4-Bromofluorobenzene	83.2	75.7-122		%REC	1	7/22/2005 9:24:00 AM
Surr: Dibromofluoromethane	82.6	64.3-124		%REC	1	7/22/2005 9:24:00 AM
Surr: Toluene-d8	90.7	74.9-120		%REC	1	7/22/2005 9:24:00 AM

PRELIMINARY

Page 3 of 3

AAC000654

Specialty Analytical

Date: 8-5-05

CLIENT: Maul, Foster & Alongi
Project: AACC / 0100.01.02

Lab Order: 0508012

Lab ID: 0508012-01 Collection Date: 8/2/2005 11:30:00 AM
Client Sample ID: P2-080205 Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-HCID						
			NWHCID		Analyst: das	
Gasoline	ND	20.6		mg/Kg-dry	1	8/2/2005
Mineral Spirits	ND	20.6		mg/Kg-dry	1	8/2/2005
Kerosene	ND	51.5		mg/Kg-dry	1	8/2/2005
Diesel	ND	51.5		mg/Kg-dry	1	8/2/2005
Lube Oil	Lube Oil	103		mg/Kg-dry	1	8/2/2005
Surr: BFB	97.3	50-150		%REC	1	8/2/2005
Surr: o-Terphenyl	97.7	50-150		%REC	1	8/2/2005
NWTPH-DX						
			NWTPH-DX		Analyst: das	
Diesel	ND	15.5		mg/Kg-dry	1	8/4/2005
Lube Oil	401	51.5		mg/Kg-dry	1	8/4/2005
Surr: o-Terphenyl	129	50-150		%REC	1	8/4/2005
TOTAL METALS BY ICP						
			E6010		Analyst: zau	
Arsenic	4.17	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
Barium	98.7	1.82		mg/Kg	2	8/3/2005 3:05:56 PM
Cadmium	0.727	0.0909		mg/Kg	1	8/3/2005 1:34:27 PM
Chromium	36.4	0.455		mg/Kg	1	8/3/2005 1:34:27 PM
Lead	135	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
Selenium	ND	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
Silver	ND	1.82		mg/Kg	1	8/3/2005 1:34:27 PM
TCLP METALS						
			E1311/6010/7470		Analyst: zau	
Arsenic, TCLP	ND	0.100		mg/L	1	8/3/2005 5:04:10 PM
Barium, TCLP	2.50	0.250		mg/L	5	8/4/2005 1:54:07 PM
Cadmium, TCLP	0.00650	0.00500		mg/L	1	8/3/2005 5:04:10 PM
Chromium, TCLP	0.0380	0.0250		mg/L	1	8/3/2005 5:04:10 PM
Lead, TCLP	ND	0.100		mg/L	1	8/3/2005 5:04:10 PM
Selenium, TCLP	ND	0.100		mg/L	1	8/3/2005 5:04:10 PM
Silver, TCLP	ND	0.0500		mg/L	1	8/3/2005 5:04:10 PM
MERCURY, TOTAL						
			SW7471		Analyst: zau	
Mercury	0.0856	0.0132		mg/Kg	1	8/3/2005
TCLP MERCURY						
			1311/7000		Analyst: zau	
Mercury, TCLP	ND	0.000100		mg/L	1	8/3/2005

Customer: ADVANCED AMERICA CONSTRUCTION

Account Number: (b) (4)

Invoice Date: 10/31/2005

Invoice Number: 0047691-1515-

Due Date: Due Upon Receipt

WM ezPay Account ID: (b) (4)

WASTE MANAGEMENT

Waste Management
 15 SE Minter Bridge Road
 Hillsboro, OR 97123

Service Location: 515-2390 Advanced American Construction, 8444 NW St. Helens Rd, Portland, Or 97231-1115

Date	Ticket	Description	Quantity	U/M	Rate	Amount
10/01/05	923074	Veh#: 126				
		Po#: na man#: na				
		Special miscellaneous	17.96	TON	722.89	722.89
		Gntr: 168-ad				
		Municipal fees				44.90
		Municipal fees				24.47
		Municipal fees				17.96
		Municipal fees				5.39
		Environmental fee lf				3.00
		Ticket total				818.61
10/01/05	923079	Veh#: 102				
		Po#: na man#: na				
		Special miscellaneous	29.04	TON	1,168.86	1,168.86
		Gntr: 168-ad				
		Municipal fees				72.60
		Municipal fees				39.57
		Municipal fees				29.04
		Municipal fees				8.71
		Environmental fee lf				3.00
		Ticket total				1,321.78
10/01/05	923094	Veh#: 122				
		Po#: na man#: na				
		Special miscellaneous	29.27	TON	1,178.12	1,178.12
		Gntr: 168-ad				
		Municipal fees				73.18
		Municipal fees				39.88
		Municipal fees				29.27
		Municipal fees				8.78
		Environmental fee lf				3.00
		Ticket total				1,332.23
10/01/05	923096	Veh#: 121				
		Po#: na man#: na				
		Special miscellaneous	23.10	TON	929.78	929.78
		Gntr: 168-ad				
		Municipal fees				57.75
		Municipal fees				31.47
		Municipal fees				23.10
		Municipal fees				6.93
		Environmental fee lf				3.00
		Ticket total				1,052.03
10/01/05	923097	Veh#: 106				
		Po#: na man#: na				
		Special miscellaneous	27.23	TON	1,096.01	1,096.01
		Gntr: 168-ad				
		Municipal fees				68.08
		Municipal fees				37.10
		Municipal fees				27.23
		Municipal fees				8.17
		Environmental fee lf				3.00
		Ticket total				1,239.59
10/01/05	923142	Veh#: jr				
		Po#: na man#: na				
		Special miscellaneous	35.12	TON	1,413.58	1,413.58
		Gntr: 168-ad				
		Municipal fees				87.80
		Municipal fees				47.85

Service Location: 515-2390 Advanced American Construction, 8444 NW St Helens Rd, Portland, Or 97231-1115

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Municipal fees				35.12
		Municipal fees				10.54
		Environmental fee If				3.00
10/01/05	923168	Ticket total				1,597.89
		Veh#:j&j				
		Po#:na man#:na				
		Special miscellaneous	39.14	TON	1,575.39	1,575.39
		Gnrtr:168-ad				
		Municipal fees				97.85
		Municipal fees				53.33
		Municipal fees				39.14
		Municipal fees				11.74
		Environmental fee If				3.00
		Ticket total				1,780.45
10/01/05	923185	Veh#:000				
		Po#:na man#:na				
		Special miscellaneous	35.12	TON	1,413.58	1,413.58
		Gnrtr:168-ad				
		Municipal fees				87.80
		Municipal fees				47.85
		Municipal fees				35.12
		Municipal fees				10.54
		Environmental fee If				3.00
		Ticket total				1,597.89
10/01/05	923202	Veh#:000				
		Po#:na man#:na				
		Special miscellaneous	33.78	TON	1,359.65	1,359.65
		Gnrtr:168-ad				
		Municipal fees				84.45
		Municipal fees				46.02
		Municipal fees				33.78
		Municipal fees				10.13
		Environmental fee If				3.00
		Ticket total				1,537.03
10/01/05	923243	Veh#:000				
		Po#:na man#:mn				
		Special miscellaneous	28.28	TON	1,138.27	1,138.27
		Gnrtr:168-ad				
		Municipal fees				70.70
		Municipal fees				38.53
		Municipal fees				28.28
		Municipal fees				8.48
		Environmental fee If				3.00
		Ticket total				1,287.26
						0.00
Total Current Charges						13,564.76

Payments Received Detail

10/13/2005 Payment - thank you

19,071.22-

Total Payments Received

19,071.22-

Customer: ADVANCED AMERICA CONSTRUCTION

Account Number: (b) (4)

Invoice Date: 09/30/2005

Invoice Number: 0047009-1515-2

Due Date: NET 30 DAYS

WM ezPay Account ID: (b) (4)

WASTE MANAGEMENT

Waste Management
 55 SE Minter Bridge Road
 Hillsboro, OR 97123

Service Location: 515-2390 Advanced American Construction: 8444 NW St Helens Rd: Portland Or 97231-1115

Date	Ticket	Description	Quantity	U/M	Rate	Amount
09/12/05	918156	Veh#: 101				
		Po#: na man#: na				
		Special miscellaneous	18.26	TON	734.97	734.97
		Gnrtr: 168-ad				
		Municipal fees				45.65
		Municipal fees				24.88
		Municipal fees				18.26
		Municipal fees				5.48
		Environmental fee If				3.00
		Ticket total				832.24
09/12/05	918229	Veh#: 138				
		Po#: na man#: na				
		Special miscellaneous	16.43	TON	661.31	661.31
		Gnrtr: 168-ad				
		Municipal fees				41.08
		Municipal fees				22.39
		Municipal fees				16.43
		Municipal fees				4.93
		Environmental fee If				3.00
		Ticket total				749.14
09/21/05	920462	Veh#: 101				
		Po#: na man#: na				
		Special miscellaneous	18.18	TON	731.75	731.75
		Gnrtr: 168-ad				
		Municipal fees				45.45
		Municipal fees				24.77
		Municipal fees				18.18
		Municipal fees				5.45
		Environmental fee If				3.00
		Ticket total				828.60
09/21/05	920548	Veh#: 00				
		Man#: na				
		Special miscellaneous	9.64	TON	388.01	388.01
		Gnrtr: 168-ad				
		Municipal fees				24.10
		Municipal fees				13.13
		Municipal fees				9.64
		Environmental fee If				3.00
		Municipal fees				2.89
		Ticket total				440.77
09/21/05	920623	Veh#: 21				
		Man#: na				
		Special miscellaneous	12.77	TON	513.99	513.99
		Gnrtr: 168-ad				
		Municipal fees				31.93
		Municipal fees				17.40
		Municipal fees				12.77
		Municipal fees				3.83
		Environmental fee If				3.00
		Ticket total				582.92
09/27/05	922043	Veh#: 122				
		Man#: na				
		Special miscellaneous	12.74	TON	512.79	512.79
		Gnrtr: 168-ad				
		Municipal fees				31.85
		Municipal fees				17.36
		Municipal fees				12.74
		Municipal fees				3.82

Service Location: 515-2390 Advanced American Construction 8444 NW St Helens Rd Portland Or 97231-1115						
Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Environmental fee if				3.00
		Ticket total				581.56
09/27/05	922127	Veh# dt				
		Man#: na				
		Spécial miscellaneous	11.04	TON	444.36	444.36
		Gnrtr: 168-ad				
		Municipal fees				27.60
		Municipal fees				15.04
		Municipal fees				11.04
		Municipal fees				3.31
		Environmental fee if				3.00
		Ticket total				504.35
						0.00
Total Current Charges						4,519.58

Customer: ADVANCED AMERICA CONSTRUCTION

Account Number: (b) (4)

Invoice Date: 08/31/2005

Invoice Number: 0045565-1515-5

Due Date: NET 30 DAYS

WM ezPay Account ID: (b) (4)

WASTE MANAGEMENT

Hillsboro Landfill
3205 SE Minter Bridge Road
Hillsboro, OR 97123

Service Location: 515-2390 Advanced American Construction, 8444 NW St Helens Rd, Portland, Or 97231-1115

Date	Ticket	Description	Quantity	U/M	Rate	Amount
08/16/05	911000	Veh#: 148				
		Po#: mult manf#: na				
		Special miscellaneous	29.61	TON	1,191.80	1,191.80
		Gntr: 168-ad				
		Municipal fees				74.03
		Municipal fees				40.34
		Municipal fees				29.61
		Municipal fees				8.88
		Environmental fee lf				3.00
		Ticket total				1,347.66
08/16/05	911083	Veh#: selfhl				
		Manf#: na				
		Special miscellaneous	32.61	TON	1,312.55	1,312.55
		Gntr: 168-ad				
		Municipal fees				81.53
		Municipal fees				44.43
		Municipal fees				32.61
		Municipal fees				9.78
		Environmental fee lf				3.00
		Ticket total				1,483.90
08/16/05	911164	Veh#: jr				
		Po#: na manf#: na				
		Special miscellaneous	29.90	TON	1,203.48	1,203.48
		Gntr: 168-ad				
		Municipal fees				74.75
		Municipal fees				40.74
		Municipal fees				29.90
		Municipal fees				8.97
		Environmental fee lf				3.00
		Ticket total				1,360.84
08/16/05	911261	Veh#: 000				
		Po#: na manf#: na				
		Special miscellaneous	25.53	TON	1,027.58	1,027.58
		Gntr: 168-ad				
		Municipal fees				63.83
		Municipal fees				34.78
		Municipal fees				25.53
		Municipal fees				7.66
		Environmental fee lf				3.00
		Ticket total				1,162.38
08/17/05	911371	Veh#: 110				
		Po#: na manf#: na				
		Special miscellaneous	31.82	TON	1,280.76	1,280.76
		Gntr: 168-ad				
		Municipal fees				79.55
		Municipal fees				43.35
		Municipal fees				31.82
		Municipal fees				9.55
		Environmental fee lf				3.00
		Ticket total				1,448.03
08/17/05	911415	Veh#: 124				
		Po#: na manf#: na				
		Special miscellaneous	14.32	TON	576.38	576.38
		Gntr: 168-ad				
		Municipal fees				35.80
		Municipal fees				19.51
		Municipal fees				14.32
		Municipal fees				4.30

Service Location: 515-2390 Advanced American Construction: 8444 NW St. Helens Rd. Portland, Or 97231-1115

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Environmental fee If				3.00
		Ticket total				653.30
08/17/05	911463	Veh#: 000				
		Po#: na man#: na				
		Special miscellaneous	33.30	TON	1,340.33	1,340.30
		Gnrtr: 168-ad				
		Municipal fees				83.25
		Municipal fees				45.37
		Municipal fees				33.30
		Municipal fees				9.90
		Environmental fee If				3.00
		Ticket total				1,515.24
08/17/05	911532	Veh#: jr				
		Po#: na man#: na				
		Special miscellaneous	32.92	TON	1,325.03	1,325.03
		Gnrtr: 168-ad				
		Municipal fees				82.30
		Municipal fees				44.85
		Municipal fees				32.92
		Municipal fees				9.88
		Environmental fee If				3.00
		Ticket total				1,497.98
08/18/05	911650	Veh#: 124				
		Man#: na				
		Special miscellaneous	27.98	TON	1,126.20	1,126.20
		Gnrtr: 168-ad				
		Municipal fees				69.95
		Municipal fees				38.12
		Municipal fees				27.98
		Municipal fees				8.39
		Environmental fee If				3.00
		Ticket total				1,273.64
08/18/05	911659	Veh#: 131				
		Man#: na				
		Special miscellaneous	30.10	TON	1,211.53	1,211.53
		Gnrtr: 168-ad				
		Municipal fees				75.25
		Municipal fees				41.01
		Municipal fees				30.10
		Municipal fees				9.03
		Environmental fee If				3.00
		Ticket total				1,369.92
08/18/05	911680	Veh#: 104				
		Man#: na				
		Special miscellaneous	31.01	TON	1,248.15	1,248.15
		Gnrtr: 168-ad				
		Municipal fees				77.53
		Municipal fees				42.25
		Municipal fees				31.01
		Municipal fees				9.30
		Environmental fee If				3.00
		Ticket total				1,411.24
08/18/05	911721	Veh#: 000				
		Po#: na man#: na				
		Special miscellaneous	31.06	TON	1,250.17	1,250.17
		Gnrtr: 168-ad				
		Municipal fees				77.65
		Municipal fees				42.32
		Municipal fees				31.06

WASTE MANAGEMENT

Hillsboro Landfill
3205 SE Minter Bridge Road
Hillsboro, OR 97123

Account Number: (b) (4)
Invoice Date: 08/31/200
Invoice Number: 0045565-1515-
Due Date: NET 30 DAY
WM ezPay Account ID: (b) (4)

Service Location: 515-2390 Advanced American Construction, 8444 NW St Helens Rd, Portland Or 97231-1115

Date	Ticket	Description	Quantity	U/M	Rate	Amount
		Municipal fees				9.32
		Environmental fee If				3.00
		Ticket total				1,413.52
08/18/05	911725	Veh#:000				
		Po#:na man#:na				
		Special miscellaneous	32.58	TON	1,311.35	1,311.35
		Gnrtr:168-ad				
		Municipal fees				81.45
		Municipal fees				44.39
		Municipal fees				32.58
		Municipal fees				9.77
		Environmental fee If				3.00
		Ticket total				1,482.54
08/18/05	911740	Veh#:9087				
		Po#:na man#:na				
		Special miscellaneous	36.29	TON	1,460.67	1,460.67
		Gnrtr:168-ad				
		Municipal fees				90.73
		Municipal fees				49.44
		Municipal fees				36.29
		Municipal fees				10.89
		Environmental fee If				3.00
		Ticket total				1,651.02
Total Current Charges						19,071.22

Customer: ADVANCED AMERICA CONSTRUCTION

Account Number: (b) (4)

Invoice Date: 04/01/2006

Invoice Number: 0050149-1515-0

Due Date: Due Upon Receipt

WM ezPay Account ID: (b) (4)

MANAGEMENT

Landfill
 SE Minter Bridge Road
 Portland, OR 97123

Service Location: 515-2390 Advanced American Construction: 8444 NW St Helens Rd. Portland Or 97231-1115

Date	Ticket	Description	Quantity	U/M	Rate	Amount
03/29/06	960867	Veh#:3324				
		Po# 50951 man#:na				
		Cont/soil	3.49	TON	40.80	142.39
		Gnrtr:168-ad				
		Municipal fees				6.81
		Municipal fees				4.76
		Municipal fees				3.49
		Environmental fee lf				3.00
		Municipal fees				1.05
		Ticket total				161.50
Total Current Charges						161.50

Payments Received Detail

12/09/2005 Payment - thank you 13,564.76-

Total Payments Received 13,564.76-

Appendix F

APPENDIX F
STORMWATER SYSTEM OPERATIONS AND MAINTENANCE
PLAN

P111 3-29-05 Scott Burgess

FORM O&M: OPERATIONS & MAINTENANCE PLAN REQUIRED IN ACCORDANCE WITH CITY CODE CHAPTER 17.38

Permit Building Application No.
Owner's Name ADVANCED AMERICAN CONSTRUCTION
Phone No. (area code required) (503) 650-3207
Mailing Address (RETURN ADDRESS FOR RECORDER)
P.O. BOX 1630, 445 S McLOUGHLIN, OREGON CITY, OR 97045
Site Address
8444 NW ST. HELENS ROAD, PORTLAND, OR 97231
Site Legal Description See attached
TL 100, 101, 500, 600, 700 SECTION 11 IN 1W

Recorded in MULTNOMAH COUNTY, OREGON
C. Swick, Deputy Clerk

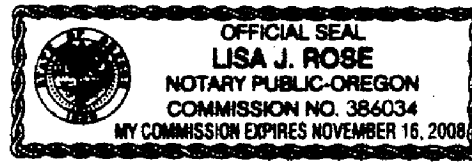
E05 5 ATTDS
Total : 41.00

2005-053869 03/29/2005 01:50:36pm

BY SIGNING BELOW, filer accepts and agrees to the terms and conditions contained in this operations & maintenance plan and in any document executed by filer and recorded with it.

Dee Burch
Filer Dee Burch, President

NOTARIZATION: GIVEN under my hand and official seal
this 25th day of March, 2005



Notary Public in and for the State of Oregon:

My Appointment Expires on: 11/16/08 Lisa J. Rose

O&M PLAN REQUIRED INFORMATION:

1) Site Plan. Include a site plan showing the facility location (in relation to building structures or other permanent monuments on the site), sources of runoff entering the facility, and where stormwater will be discharged to and leaving the facility.

Site Plan (insert here or include separate sheet):

See Attached

The stormwater management facility located on this site plan is a required condition of building permit approval for the identified property. The owner of the identified property is required to operate and maintain this facility in accordance with the O&M plan on file with the City of Portland, Bureau of Environmental Services. The requirement to operate and maintain this facility in accordance with the on-file O&M plan is binding on all current and future owners of the property. The O&M plan may be modified under written consent of new owners with written approval by and re-filing with the Bureau of Environmental Services. The O&M plan for this facility is available at the Bureau of Environmental Services, located at 1120 SW 5th Avenue, Room 1000, Portland, Oregon, between the hours of 8 a.m. and 5 p.m., Monday through Friday. Call (503) 823-7761 for assistance.

2) Description of the financial method used to cover future operations and maintenance. Check One:

☐ Homeowner Association ☒ Property Owner Account ☐ Other (describe)

3) Party (ies) responsible for maintenance (only if other than owner).

Daytime Phone No. (area code required) (____) ____ - ____ Emergency/ After-Hours Contact Phone No. (____) ____ - ____

Maintenance Contact & Address

4) Maintenance practices and schedule for the stormwater facility is included in the facility-specific O&M plan filed with the Bureau of Environmental Services, City of Portland. The operation and maintenance practices are based on the publication date of the City of Portland's Stormwater Management Manual.

Preparation Date 03 / 18 / 05 Revision Date ____ / ____ / ____ Estimated Date of Installation (month/year) ____ / ____

By Ralph Henderson

MACKENZIE
Civil Engineering
Architectural
Transportation Planning
Land Use Planning
Portland, OR 97208
503.463.7800
503.463.7801
503.463.7802



NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.

JOHN C. GIBSON
ENR. MCCORMICK PACIFIC
180 SW Sandberg Rd.
Portland, Oregon 97233
Phone (503) 834-2088
AX (503) 834-1924

McGraw-Hill
FACILITY ENVIRONMENTAL
GROUP
13 SW River
Portland, Oregon 97208
Phone (503) 222-1833
AX (503) 222-1833



GROUP ALLOCATION AND
LAND ACQUISITION
NEW FACILITY AND THE PROPERTY OF
THE CITY OF PORTLAND, OREGON, IS
THE PROPERTY OF THE CITY OF
PORTLAND, OREGON, AND IS NOT
TO BE USED FOR ANY OTHER PURPOSE.

PROJECT TITLE:
UTILITY PLAN

DRAWN BY: R21
CHECKED BY:
DATE:

C23
CD NO. 2040378.00

NOT A PART OF THE PROJECT

EXHIBIT "ONE"

PARCEL 1:

A tract of land in Section 11, Township 1 North, Range 1 West of the Willamette Meridian, in the City of Portland, Multnomah County, Oregon, described as follows:

Beginning on the north line of Block C, Springville, now vacated, with the intersection of the northeasterly line of the Spokane, Portland & Seattle Railway right-of-way; thence North 52° East 292.9 feet; thence North 38° 46' West 70 feet; thence South 52° West 300.7 feet; thence South 45° 06' East 70.53 feet to the place of beginning.

PARCEL 2:

A tract of land in Section 11, Township 1 North, Range 1 West of the Willamette Meridian, in the City of Portland, Multnomah County, Oregon, described as follows:

Beginning at the southeasterly corner of the tract of land conveyed to Portland Manufacturing Company by deed recorded April 8, 1936 in Book 332, Page 558, Deed Records, said point also being on the northerly line of the tract of land conveyed to L.A. Jacobsen by deed recorded May 24, 1921 in Book 853, Page 8, Deed Records; thence South 52° West along the northerly line of said Jacobsen tract 289 feet to the northeasterly line of the Northern Pacific Railroad right-of-way also referred to as the Spokane, Portland & Seattle Railway right-of-way; thence Northwest along said northeasterly right-of-wayline to its intersection with the easterly extension of the southeasterly line of Ferry Street, said point also being the southwest corner of the tract of land conveyed to Multnomah County by deed recorded July 12, 1912 in Book 586, Page 347, Deed Records; thence North 52° East 292.9 feet to the low water mark of the Willamette River; thence Southeasterly along said low water mark to the place of beginning.

PARCEL 3:

A tract of land in Section 11, Township 1 North, Range 1 West of the Willamette Meridian, in the City of Portland, Multnomah County, Oregon, described as follows:

Beginning at a point on the northeasterly line of the Spokane, Portland & Seattle Railway right-of-way which is North 38° West 3.94 feet from the southeasterly line of Lot 2, Block 3, on the plat of Springville, recorded in Book G, Page 255, Deed Records; thence Northwest along said northeasterly right-of-way line 751.17 feet to a point which is North 38° West 753.94 feet from the southeast corner of aforesaid Lot 2; thence North 52° East parallel with the southeasterly line of said Lot 2, a distance of 289 feet to the harbor line of the Willamette River; thence South 48° 13' 44" East along said harbor line 762.10 feet to a point which is North 52° East from the point of beginning; thence South 52° West 401.77 feet to the place of beginning.

EXCEPT that portion lying below the low water line of the Willamette River.

FURTHER EXCEPTING the tract of land conveyed to Multnomah County by deed recorded September 16, 1929 in Book 29, Page 28, Deed Records, described as follows:

Beginning at a point on the harbor line of the Willamette River which is 80 feet Northerly from, when measured at right angles to the centerline of N. Philadelphia Avenue, extended Westerly, said point also being 204 feet Southerly from the northeast corner of Parcel III as above described; thence Westerly parallel with the extended centerline of said street 100 feet; thence Southerly at right angles 30 feet; thence Westerly parallel with the extended centerline

11-24-04

of said street, 205 feet to a point on the northeasterly right-of-way line of the Spokane, Portland and Seattle Railway which is 50 feet Northerly from, when measured at right angles to, said extended street centerline; thence Southerly along said right-of-way line to a point which is 50 feet Southerly from, when measured at right angles to, said extended street centerline; thence Easterly parallel with the westerly extension of the centerline of N. Philadelphia Avenue 194 feet; thence Southerly at right angles 30 feet; thence Easterly, parallel with said extended street centerline 140 feet to a point on the harbor line which is 80 feet Southerly from, when measured at right angles to, said extended street centerline; thence Northerly along said harbor line 164.9 feet to the place of beginning.

ALSO TOGETHER WITH the following described tracts of land:

(A) All of the southeasterly 30 feet to the northwesterly 46.06 feet of Lots 2 and 9, Block 3, Springville, now vacated, lying Southwesterly of the northeasterly line of the Spokane, Portland and Seattle Railway right-of-way, EXCEPTING THEREFROM the portion thereof within said railroad right-of-way.

(B) A tract of land beginning at the southwesterly line of the Spokane, Portland and Seattle Railway right-of-way North 38° West 33.94 feet from the southeasterly line of Lot 2, Block 3, Springville; thence Northwesterly along said right-of-way line 16.06 feet to a point distant North 38° West 50 feet from the southeast line of Lot 2, Block 3, Springville; thence South 52° West 125 feet, more or less, along a line distant North 38° West 50 feet and parallel with the southeasterly line of Lots 2 and 9, Block 3, Springville, to the northeasterly line of St. Helens Road (as existed in 1952); thence Southeasterly 16.06 feet, more or less, along said northeasterly line to an intersection of said northeast line with line North 38° West 33.94 feet from the southeasterly line of Lots 2 and 9, Block 3, Springville, extended Southwesterly; thence North 52° East 125 feet, more or less, to the point of beginning.

EXCEPT FROM ABOVE TRACTS A & B that portion acquired by the State of Oregon by and through its State Highway Commission, Circuit Court Case No. 282435, Multnomah County, Oregon.

PARCEL 4:

A tract of land in the Southeast 1/4 of Section 11, Township 1 North, Range 1 West of the Willamette Meridian, in the City of Portland, Multnomah County, Oregon, described as follows:

Beginning at a 5/8" iron rod w/yellow plastic cap (YPC) "Caswell PLS 737" shown as a set monument on Multnomah County Survey #50640, which bears South 34 degrees 08'07" East, 2337.09 feet from the Witness Corner of the S.E. Corner of the G.J. Watts DLC #46, said rod located at the intersection of the Southerly right-of-way line (ROW) of the St. Helens Bridge and the Southwesterly ROW of the Northern Pacific R.R. railroad; thence Southeasterly 272.28 feet along aforementioned railroad ROW on the arc of a 3706.79 foot radius curve to the right (the chord of which bears S37 degrees 15'40" E, 272.22 feet) to a 5/8" iron rod w/YPC "City of Portland Water Bureau"; thence S64 degrees 46'42" W, 82.72 feet to a 5/8" iron rod w/YPC "City of Portland Water Bureau" on the Northeasterly ROW line of Columbia River Highway (Hwy 30); thence N35 degrees 33'46" W, 275.72 feet along the aforementioned Northeasterly ROW line of Columbia River Highway (Hwy 30) to its intersection with the Southerly ROW line of the St. John's Bridge to a 5/8" iron rod shown as a set monument on Multnomah County Survey #50640; thence N57 degrees 35'18" E, 74.76 feet along the Southerly ROW of the St. Johns Bridge to its intersection with aforementioned Northern Pacific R.R. ROW line to the point of beginning.

PARCEL 5:

A tract of land in Section 11, Township 1 North, Range 1 West of the Willamette Meridian, in the City of Portland, Multnomah County, Oregon, described as follows:

11-24-04

Order No. 10-1107979-28

Beginning at the intersection of the northwesterly line and its southwesterly extension of Lots 3 and 8, Block 1, Springville, now vacated, said line also being the northerly line of Tax Lot 10 as shown by the 1940 Tax Roll, with the northeasterly line of NW St. Helens Road (as existed in 1952); thence Southeasterly along said northeasterly road line 28.6 feet to the northwest corner of the tract of land conveyed to Multnomah County by deed recorded September 27, 1929 in Book 31, Page 288, Deed Records; thence North $55^{\circ} 48'$ East along the northwesterly line of said tract 128 feet, more or less, to the southwesterly line of the Spokane, Portland and Seattle Railway right-of-way; thence Northwesterly along said southwesterly right-of-way line to the northwesterly line of aforesaid Lot 3, Block 1, Springville; thence Southwesterly along said northwesterly line and its southwesterly extension of Lots 3 and 8, Block 1, Springville, now vacated, to the place of beginning.

EXCEPTING THEREFROM that portion acquired by the State of Oregon by and through its State Highway Commission, Circuit Court Case No. 282435, Multnomah County, Oregon.

PARCEL 6:

A tract of land in Section 11, Township 1 North, Range 1 West of the Willamette Meridian, in the City of Portland, Multnomah County, Oregon, described as follows:

Beginning at the intersection of the southeasterly line of Lot 2, Block 1, Springville, now vacated, with the southwesterly line of the Spokane, Portland and Seattle Railway right-of-way; thence Northwesterly along said right-of-way line to the northwesterly line of Block C, Springville, now vacated; thence Southwesterly along said northwesterly block line and its southwesterly extension to the northeasterly line of NW St. Helens Road (as existed in 1952); thence Southeasterly along said northeasterly road line to its intersection with the southwesterly extension of the southeasterly line of Lot 9, Block 1, Springville, now vacated; thence Northeasterly to the point of beginning; TOGETHER WITH the right to use the roadway under the West end of the St. Johns Bridge.

EXCEPTING THEREFROM that portion acquired by the State of Oregon by and through its State Highway Commission, Circuit Court Case No. 282435, Multnomah County, Oregon.

11-24-04

**FORM O&M: OPERATIONS & MAINTENANCE PLAN
INSTRUCTIONS**

following are instructions to prepare and file Form O&M: Operations & Maintenance Plan for a stormwater management facility.

City of Portland Code Section 17.38.040 states that "All new development, redevelopment, plats, site plans, building permits or public works projects, as a condition of approval, shall be required to submit an operation and maintenance plan for the required stormwater quality and quantity control facilities for review and approval by the Bureau of Environmental Services."

Failure to properly operate or maintain the water quality or quantity control facility according to the operation and maintenance plan may result in a civil penalty, as specified in 17.38.045: Enforcement.

A copy of the operation and maintenance plan shall be filed with the Bureau of Environmental Services. Completed O&M Plans shall be submitted to:

Document Services
1900 SW Fourth Ave., Suite 5000
Portland, OR 97201

The operation and maintenance plan shall be recorded and filed with the appropriate county Department of Assessment and Taxation. The O&M plan must be recorded in the county where the property site is located. Form O&M with a site plan must be recorded. Additional plans of the facility and facility-specific O&M activities will be retained at the Portland Building – 1200 SW 5th Avenue, Room 1000.

Before recording the O&M plan, the applicant shall sign the form, and the signature shall be notarized. When completed accurately, this form meets the recording requirements in Multnomah, Clackamas, and Washington Counties. The notarized O&M plan may be submitted in person or mailed, along with payment of the applicable fees, to the appropriate county. Each county provides a web site and telephone number with recorded information to answer commonly asked questions about the recording procedures.

County Recorder's Office Addresses and Fees
(as of June 2001)

Multnomah

Multnomah County Recorder
Room 158
501 SE Hawthorne St.
Portland, OR 97214

[Http://www.co.multnomah.or.us/at/services.html](http://www.co.multnomah.or.us/at/services.html)

Phone: 503-988-3326

\$19 first page, \$5 each additional page

Washington

Washington County Recording Office
155 N. First Ave.
Suite 130, MS 9
Hillsboro, OR 97124

[Http://www.co.washington.or.us/deptmts/at/recording/record.htm](http://www.co.washington.or.us/deptmts/at/recording/record.htm)

Phone: 503-846-8751

\$22 first page, \$5 each additional page

Clackamas

Clackamas County Recording Division
104 11th St.
Oregon City, OR 97045

[Http://www.co.clackamas.or.us/recording/legible.htm](http://www.co.clackamas.or.us/recording/legible.htm)

Phone: 503-655-8661

\$19 first page, \$5 each additional page

STORMWATER MANAGEMENT FACILITY INSPECTION & MAINTENANCE LOG (SAMPLE)

Property Address:

Inspection Date:

Inspection Time:

Inspected By:

Approximate Date/Time of Last Rainfall:

Type of Stormwater Management Facility:

Location of Facility on Site (In relation to buildings or other permanent structures):

Water levels and observations (Oil sheen, smell, turbidity, etc.):

ment accumulation & record of sediment removal:

Condition of vegetation (Height, survival rates, invasive species present, etc.) & record of replacement and management (mowing, weeding, etc.):

Condition of physical properties such as inlets, outlets, piping, fences, irrigation facilities, and side slopes. Record damaged items and replacement activities:

Presence of insects or vectors. Record control activities:

Identify safety hazards present. Record resolution activities:

Underground Detention Tanks, Vaults, and Pipes

Operations & Maintenance Plan

Underground detention tanks, vaults, and pipes are designed to fill with stormwater during large storm events, slowly releasing it over a number of hours. There are numerous components to each system. **Drain Inlet Pipes** convey stormwater into the detention facility. The **detention Chamber** is the structure in which stormwater accumulates during a storm event. **Orifice Structure/ Outlet Drain Pipe** restricts the flow out of the detention chamber, allowing it to fill up and slowly drain out. The orifice structure is located at the downstream end of the detention chamber. Underground facilities shall be inspected quarterly and within 48 hours after each major storm event. The facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

Drain Inlet Pipes shall be inspected for clogging or leaks where it enters the vault or basin during every inspection and cleanout.

- Debris/sediment that is found to clog the inlet shall be removed, tested, and disposed of in accordance with applicable federal and state requirements.

Detention Chamber shall be inspected for cracks or damage during each inspection.

- The detention chamber shall be cleaned out yearly or after an inch of sediment has accumulated. If there is a valve on the outlet pipe it shall be closed otherwise the outlet shall be plugged prior to cleanout. Grit and sediment that has settled to the bottom of the chamber shall be removed during each cleaning.
- Water and sediment in the detention chamber shall be removed, tested, and disposed of in accordance with regulations.
- Cleaning shall be done without use of detergents or surfactants. A pressure washer may be used if necessary.

Orifice Structure/ Outlet Drain Pipe shall be inspected for clogging during unit inspections/cleanouts.

- Debris/sediment that is found to clog the inlet shall be removed, tested, and disposed of in accordance with applicable federal and state requirements.

Vegetation such as trees should not be located in or around the detention facility because roots from trees can penetrate the inlet body, and leaves from deciduous trees and shrubs can increase the risk of clogging the intake pipe.

- Large shrubs or trees that are likely to interfere with detention facility operation shall be identified at each inspection then removed.

Source Control measures typically include structural and non-structural controls. Non-structural controls can include street sweeping and other good house keeping practices. It is often easier to prevent pollutants from entering stormwater than to remove them.

- Source control measures shall be inspected and maintained (where applicable).

Spill Prevention procedures require high-risk site users to reduce the risk of spills. However, virtually all sites, including residential and commercial, present dangers from spills. Homes contain a wide variety of toxic materials including gasoline for lawn mowers, antifreeze for cars, nail polish remover, pesticides, and cleaning aids that can adversely affect storm water if spilled. It is important for everyone to exercise caution when handling substances that can contaminate stormwater. Spill prevention procedures shall be implemented in areas where there is likelihood of spills from hazardous materials.

Training and/or written guidance information for operating and maintaining detention facilities shall be provided to all property owners and tenants. A copy of the O&M Plan shall be provided to all property owners and tenants.

Access to the detention facility is required for efficient maintenance.

Egress and ingress routes shall be open and maintained to design standards.

Signage may serve to educate people about the importance or function of the site's stormwater protection measures. Signs may also discourage behavior that adversely impacts the stormwater protection measures and encourages behavior that enhances or preserves stormwater quality. If debris is a problem, a sign reminding people not to litter may partially solve the problem.

Signage (where applicable) will be maintained and repaired as needed during or shortly after inspections.

Insects & Rodents shall not be harbored in the detention facility. Pest control measures shall be taken when insects/rodents are found to be present.

If sprays are considered, then a mosquito larvicide, such as Bacillus thurensensis or Altoside formulations can be applied only if absolutely necessary, and only by a licensed individual or contractor.

- Holes in the ground located in and around the detention facility shall be filled.

The Stormwater Management StormFilter®

Cast-In-Place, Precast, and Linear Units

Important: *These guidelines should be used as a part of your site stormwater management plan.*

Description

The Stormwater Management StormFilter® (StormFilter) is a passive, flow-through, stormwater filtration system. The system is comprised of one or more vaults that house rechargeable, media-filled, filter cartridges. The StormFilter works by passing stormwater through the media-filled cartridges, which trap particulates and adsorb materials such as dissolved metals and hydrocarbons. Once filtered through the media, the treated stormwater is directed to a collection pipe or discharged into an open channel drainage way.

The StormFilter is offered in multiple configurations, including precast, linear, catch basin, manhole, and cast-in-place. The precast, linear, manhole, and catch basin models utilize pre-manufactured units to ease the design and installation processes. The cast-in-place units are customized for larger flows and may be either covered or uncovered underground units.

Purpose

The StormFilter is a passive, flow-through, stormwater filtration system designed to improve the quality of stormwater runoff from the urban environment before it enters receiving waterways. It is intended to function as a Best Management Practice

(BMP) to meet federal, state, and local requirements for treating runoff in compliance with the Clean Water Act.

Through independent third party studies, it has been demonstrated that the StormFilter is highly effective for treatment of first flush flows and for treatment of flow-paced flows during the latter part of a storm. In general, the StormFilter's efficiency is highest when pollutant concentrations are highest. The primary non-point source pollutants targeted for removal by the StormFilter are: suspended solids (TSS), oil and grease, soluble metals, nutrients, organics, and trash and debris.

Sizing

The StormFilter is sized to treat the peak flow of a water quality design storm. The peak flow is determined from calculations based on the contributing watershed hydrology and from a design storm magnitude set by the local stormwater management agency. The particular size of a StormFilter unit is determined by the number of filter cartridges (see Figure 1) required to treat this peak flow.

The flow rate through each filter cartridge is adjustable, allowing control over the amount of contact time between the influent and the filter media. The maximum flow rate through each cartridge can be adjusted to between 5 and 15 gpm using a calibrated restrictor disc at the base of each filter cartridge. Adjustments to the cartridge flow rate will affect the number of cartridges required to treat the peak flow.

Basic Function

The StormFilter is designed to siphon stormwater runoff through a filter cartridge containing media. A variety of filter media

is available and can be customized for each site to target and remove the desired levels of sediments, dissolved phosphorus, dissolved metals, organics, and oil and grease. In many cases, a combination of media is recommended to maximize the effectiveness of the stormwater pollutant removal.

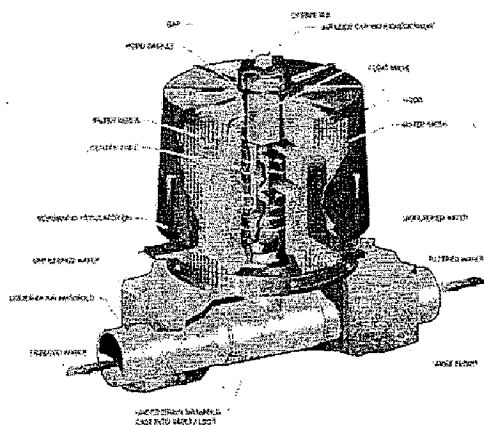


Figure 1. The StormFilter Cartridge

Priming System Function

When stormwater in the StormFilter unit enters a StormFilter cartridge, it percolates horizontally through the cartridge's filter media and collects in the center tube of the cartridge, where the float in the cartridge is in a closed (downward) position.

Water continues to pass through the filter media and into the cartridge's center tube. The air in the cartridge is displaced by the water and purged from beneath the filter hood through the one-way check valve located in the cap. Once the center tube is filled with water (approximately 18 inches deep), there is enough buoyant force on the float to open the float valve and allow the treated water in the center tube to flow into the under-drain manifold. This causes the

check valve to close, initiating a siphon that draws polluted water throughout the full surface area and volume of the filter. Thus, the entire filter cartridge is used to filter water throughout the duration of the storm, regardless of the water surface elevation in

the unit. This siphon continues until the water surface elevation drops to the elevation of the hood's scrubbing regulators.

The cartridges are connected to the under-drain manifold with a plastic connector. Since some media used is potentially buoyant, a threaded connector affixed to the under-drain manifold (with glue or other adhesive) is necessary to ensure that the cartridge isn't lifted out of place. For the heavier compost media, a slip connector is used.

The StormFilter is also equipped with flow spreaders that trap floating debris and surface films, even during overflow conditions. Depending on individual site characteristics, some systems are equipped with high and/or base flow bypasses. High flow bypasses are installed when the calculated peak storm event generates a flow that overcomes the overflow capacity of the system. This is especially important for precast systems. Base flow bypasses are sometimes installed to bypass continuous inflows caused by ground water seepage, which usually do not require treatment. All StormFilter units are designed with an overflow. The overflow operates when the inflow rate is greater than the treatment capacity of the filter cartridges.

MAINTENANCE GUIDELINES



Maintenance Guidelines

The primary purpose of the StormFilter is to filter out and prevent pollutants from entering our waterways. Like any effective filtration system, periodically these pollutants must be removed to restore the StormFilter to its full efficiency and effectiveness.

Maintenance requirements and frequency are dependent on the pollutant load characteristics of each site.

Maintenance activities may be required in the event of a chemical spill or due to excessive sediment loading from site erosion or extreme storms. It is also good practice to inspect the system after severe storm events.

Types of Maintenance

Presently, procedures have been developed for two levels of maintenance:

- Inspection/minor maintenance
- Major maintenance.

Inspection/minor maintenance activities are combined since minor maintenance does not require special equipment and typically little or no materials are in need of disposal.

Inspection/minor maintenance typically involves:

- Inspection of the vault itself
- Removal of vegetation and trash and debris.

Major maintenance typically includes:

- Cartridge replacement
- Sediment removal

Important: Applicable safety (OSHA) and disposal regulations should be followed during all maintenance activities.

Maintenance Activity Timing

Two scheduled inspections/maintenance activities should take place during the year.

First, an inspection/minor maintenance activity should be done. During the minor maintenance activity (routine inspection, debris removal), the need for major maintenance should be determined and, if disposal during major maintenance will be required, samples of the sediments and media should be obtained.

Second, if required, a major maintenance activity (replacement of the filter cartridges and associated sediment removal) should be performed.

In addition to these two scheduled activities, it is important to check the condition of the StormFilter unit after major storms for damage caused by high flows and for high sediment accumulation that may be caused by localized erosion in the drainage area. It may be necessary to adjust the maintenance activity schedule depending on the actual operating conditions encountered by the system.

In general, minor maintenance activities will occur late in the rainy season, and major maintenance will occur in late summer to early fall when flows into the system are not likely to be present.

Maintenance Activity Frequency

The primary factor controlling timing of maintenance for the StormFilter is sedimentation.

A properly functioning system will remove solids from water by trapping particulates in the porous structure of the filter media. The flow through the system will naturally decrease as more and more solids are trapped. Eventually the flow through the system will be low enough to require replacement of the cartridges. It may be possible to extend the usable span of the cartridges by removing sediment from upstream trapping devices on an as-needed basis in order to prevent material from being re-suspended and discharged to the system.

Site conditions greatly influence maintenance requirements. StormFilter units located in areas with erosion or active construction should be inspected and maintained more often than those in fully stabilized areas.

The maintenance frequency may be adjusted as additional monitoring information becomes available during the inspection program. Areas that develop known problems should be inspected more frequently than areas that demonstrate no problems, particularly after large storms.

Ultimately, inspection and maintenance activities should be scheduled based on the historic records and characteristics of an individual StormFilter system. It is recommended that the maintenance agency develop a database to properly manage StormFilter maintenance programs.

Prior to the development of the maintenance database, the following maintenance frequencies should be followed:

Inspection/minor maintenance

- One time per year
- After Major Storms

Major maintenance

- One time per year
- In the event of a chemical spill

Frequencies should be updated as required.

The recommended initial frequency for inspection/minor maintenance is two times per year for the precast unit. StormFilter units should be inspected after all major storms. Sediment removal and cartridge replacement on an annual basis is recommended until further knowledge is gained about a particular system.

Once an understanding of site characteristics has been established, maintenance may not be needed for one to two years, but inspection is warranted.

Maintenance Methods

Inspection/Minor Maintenance

The primary goal of a maintenance inspection is to assess the condition of the cartridges relative to the level of sediment loading. It may be desirable to conduct this inspection during a storm to observe the relative flow through the filter cartridges. If the submerged cartridges are severely plugged, large amounts of sediments will be present and very little flow will be discharged from the drainage pipes. If this is the case, it is likely that the cartridges need to be replaced.

Warning: In the case of a spill, the worker should abort maintenance activities until the proper guidance is obtained. Notify the local hazard control agency and Stormwater Management Inc. immediately.

To conduct an inspection and/or minor maintenance:

Important: Maintenance must be performed by a utility worker familiar with StormFilter units.

1. If applicable, set up safety equipment to protect pedestrians from fall hazards due to open vault doors or when work is being done near walkways or roadways.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.

3. Open the doors to the vault and allow the system to air out for 5-10 minutes.
4. Without entering the vault, inspect the inside of the unit, including components.
5. Take notes about the external and internal condition of the vault.

Be sure to record the level of sediment build-up on the floor of the vault, in the forebay, and on top of the cartridges. If flow is occurring, note the level of water and estimate the flow rate per drainage pipe. Record all observations.

6. Remove large loose debris and trash using a pole with a grapple or net on the end.
7. Close and fasten the door.
8. Remove safety equipment.
9. Make notes about the local drainage area relative to ongoing construction, erosion problems, or high loading of other materials to the system.
10. Finally, review the condition reports from the previous minor and major maintenance visits, and schedule cartridge replacement if needed.

Major Maintenance

Depending on the configuration of the particular system, a worker may be required to enter the vault to perform some tasks.

Important: If vault entry is required, OSHA rules for confined space entry must be followed.

Filter cartridge replacement should occur during dry weather. It may be necessary to plug the filter inlet pipe if base flows exist. Standing water present in the vault should be regarded as polluted and should be contained during this operation by temporarily capping the manifold connectors.

Replacement cartridges will be delivered to the site. Information concerning how to obtain the replacement cartridges is available from Stormwater Management, Inc.

Warning: In the case of a spill, the worker should abort maintenance activities until the proper guidance is obtained. Notify the local hazard control agency and Stormwater Management Inc. immediately.

To conduct cartridge replacement and sediment removal maintenance:

1. If applicable, set up safety equipment to protect pedestrians from fall hazards due to open vault doors or when work is being done near walkways or roadways.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the doors to the vault and allow the system to air out for 5-10 minutes.
4. Without entering the vault, give the inside of the unit, including components, a general condition inspection.
5. Make notes about the external and internal condition of the vault.

Give particular attention to recording the level of sediment build-up on the floor of the vault, in the forebay, and on top of the internal components.

6. Remove large loose debris and trash using a pole with a grapple or net on the end.
7. Using a boom, crane, or other device (dolly and ramp), offload the replacement cartridges (up to 150 lbs. each) and set aside.
8. Remove used cartridges from the vault using one of the following methods:

Important: This activity will require that workers enter the vault to remove the cartridges from the drainage system.

Method 1:

a. Using an appropriate sling, attach the cable from the boom, crane, or tripod to the cartridge being removed. Contact SMI for specifications on appropriate attachment devices.

This activity will require that workers enter the vault to remove the cartridges from the drainage system and place them under the vault opening for lifting.

Important: Note that cartridges containing media other than the leaf media require unscrewing from their threaded connectors. Take care not to damage the manifold connectors. This connector should remain installed in the manifold and capped if necessary.

b. Remove the used cartridges (250 lbs. each) from the vault.

Important: Care must be used to avoid damaging the cartridges during removal and installation. The cost of repairing components damaged during maintenance will be the responsibility of the owner unless Stormwater Management performs the maintenance activities and damage is not related to discharges to the system.

c. Set the used cartridge aside or load onto the hauling truck.

d. Continue steps a through c until all cartridges have been removed.

Method 2:

a. Unscrew the cartridge cap.

b. Remove the cartridge hood.

c. Tip the cartridge on its side.

Important: Note that cartridges containing media other than the leaf media require unscrewing from their threaded connectors. Take care not to damage the manifold connectors. This connector should remain installed in the manifold and capped if necessary.

d. Empty the cartridge onto the vault floor.

e. Set the empty, used cartridge aside or load onto the hauling truck.

f. Continue steps a through e until all cartridges have been removed.

9. Remove deposited sediment from the floor of the vault and, if large amounts are present, from the forebay. This can usually be accomplished by shoveling the sediment into containers, which, once full, are lifted mechanically from the vault and placed onto the hauling truck. If Method 2 in Step 8 is used to empty the cartridges, or in cases of extreme sediment loading, a vacuum truck may be required.

10. Once the sediments are removed, assess the condition of the vault and the condition of the manifold and connectors. The connectors are short sections of 2-inch schedule 40 PVC, or threaded schedule 80 PVC that should protrude above the floor of the vault.

a. If required, apply a light coating of FDA approved silicon grease to the outside of the exposed portion of the connectors. This ensures a watertight connection between the cartridge and the drainage pipe.

b. Replace any damaged connectors.

11. Using the boom, crane, or tripod, lower and install the new cartridges. Once again, take care not to damage connections.
12. Close and fasten the door.
13. Remove safety equipment.
14. Make notes about the local drainage area relative to ongoing construction, erosion problems, or high loadings of other materials to the system.
15. Finally, dispose of the residual materials in accordance with applicable regulations. Make arrangements to return the used cartridges to Stormwater Management, Inc.

Related Maintenance Activities

(Performed on an as-needed basis)

StormFilter units are often just one of many components in a more comprehensive stormwater drainage and treatment system. The entire system may include catch basins, detention vaults, sedimentation vaults and manholes, detention/retention ponds, swales, artificial wetlands, and other miscellaneous components.

In order for maintenance of the StormFilter to be successful, it is imperative that all other components be properly maintained. The maintenance/repair of upstream facilities should be carried out prior to StormFilter maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil and grease loading, and discharges of inappropriate materials.

Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in a manner that will not allow the material to affect surface or ground water. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads.

Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. It is not appropriate to discharge untreated materials back to the stormwater drainage system.

Part of arranging for maintenance to occur should include coordination of disposal of solids (landfill coordination) and liquids (municipal vacuum truck decant facility, local wastewater treatment plant, on-site treatment and discharge).

Owners should contact the local public works department and inquire about how the department disposes of their street waste residuals. Stormwater Management Inc will determine disposal methods or reuse of the media contained in the cartridges. If the material has been contaminated with any unusual substance, the cost of special handling and disposal will be the responsibility of the owner.

StormFilter Minor Maintenance and Inspection Data Sheet

Date: _____ Personnel: _____

Location: _____ System Size: _____

System Type: Cast-In-Place Precast Linear

System Observations

Media Months in Service: _____

Oil and Grease in Forebay: **Yes** **No** _____

Sediment Depth in Forebay: _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

Estimated Flow from Drainage Pipes (if available): _____

Cartridges Submerged: **Yes** **No** How Deep: _____

StormFilter Minor Maintenance Activities (check off if done and give description)

Trash and Debris Removal: _____

Minor Structural Repairs: _____

Drainage Area Report

Excessive Oil and Grease Loading: **Yes** **No** Source: _____

Sediment Accumulation on Pavement: **Yes** **No** Source: _____

Erosion of Landscaped Areas: **Yes** **No** Source: _____

Items Needing Further Work: _____

Other Comments: _____

Review the condition reports from the previous minor and major maintenance visits.

StormFilter Major Maintenance/Cartridge Replacement Data Sheet

Date: _____ Personnel: _____

Location: _____ System Size: _____

System Type: Cast-In-Place Precast Linear

List Safety Procedures and Equipment Used: _____

System Observations

Media Months in Service: _____

Oil and Grease in Forebay: **Yes** **No** _____

Sediment Depth in Forebay: _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

Drainage Area Report

Excessive Oil and Grease Loading: **Yes** **No** Source: _____

Sediment Accumulation on Pavement: **Yes** **No** Source: _____

Erosion of Landscaped Areas: **Yes** **No** Source: _____

StormFilter Cartridge Replacement Maintenance Activities

Remove Trash and Debris: **Yes** **No** Details: _____

Replace Cartridges: **Yes** **No** Details: _____

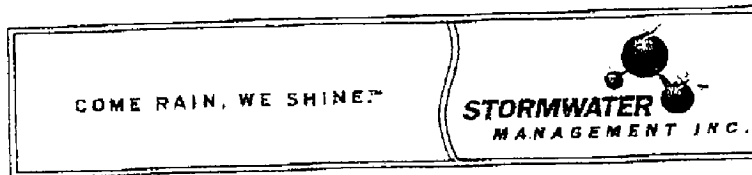
Sediment Removed: **Yes** **No** Details: _____

Quantity of Sediment Removed (estimate?): _____

Minor Structural Repairs: **Yes** **No** Details: _____

Residuals (debris, sediment) Disposal Methods: _____

Notes: _____



TO:	Ralph Henderson	FROM:	Ernity Newell
COMPANY:	Group Mackenzie	PAGES:	2
FAX:	503-228-1285	DATE:	March 18, 2005
PHONE:	503-224-4560	TIME:	3:59 PM
RE:	Advanced American Construction Project Size and Cost Estimate	CC:	Corky Lambert - Regional Sales Manager

☐ FOR APPROVAL ☐ FOR REVIEW AND COMMENT ☐ FOR YOUR USE ☒ AS REQUESTED

COMMENTS:

In accordance with your request for information, we are pleased to submit the following size and cost estimate for the proposed stormwater treatment system for the Advanced American Construction project in Portland, OR.

The Stormwater Management StormFilter® is a passive siphon-actuated, flow-through, stormwater filtration system consisting of a structure that houses rechargeable, media-filled filter cartridges. The StormFilter works by passing stormwater through the media-filled cartridges, which trap particulates and adsorb pollutants such as dissolved metals, nutrients, and hydrocarbons.

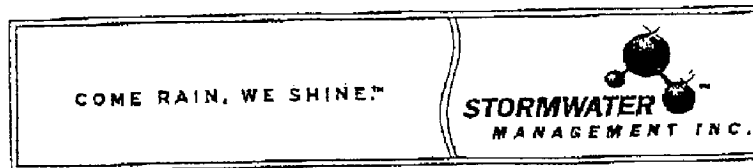
The design of the StormFilter assumes that system maintenance will be performed at regular intervals. Stormwater Management Inc. can be contracted to perform the maintenance or can work directly with owners who wish to perform their own maintenance. The estimated cost for contracting maintenance with SMI is attached. Please contact us for more information about maintenance options.

The size and cost estimate is based on information provided by Group Mackenzie and is not a formal quote. A formal quote can be provided once final plans have been provided.

Thank you for the opportunity to provide you with this information. If the StormFilter seems like an appropriate solution for your site, please email us or visit our website at www.stormwaterinc.com to download AutoCad drawings or PDF files for inclusion on your plans. Please let us know if there is any additional information or design support we can provide.

We look forward to working with you on this project.

STORMWATER MANAGEMENT, INC. • 12021-B NE AIRPORT WAY, PORTLAND, OR 97220
PHONE: 800/548-4667 • FAX: 800/561-1271 • STORMWATERINC.COM



Advanced American Construction - Stormwater Treatment System
Size and Cost Estimate
Portland, OR

Information provided:

- Total contributing area = 1.77 acres
- Impervious area = 1.77 acres
- Water Quality Flow = 0.303 cfs
- Peak Flow Rate = 4.49 cfs
- Presiding agency = City of Portland, OR

Assumptions:

- Media = Perlite cartridges
- Cartridge Flow Rate = 15 gpm/cartridge
- Drop required from inlet to outlet = 2.3' minimum

Size and cost estimates:

The StormFilter is a flow-based system, and therefore, is sized by calculating the peak water quality flow rate associated with the design storm. The water quality flow rate was calculated by Group Mackenzie using the Rational Method assuming 0.19" per hour with a runoff coefficient of 0.9.

This site will consist of two development phases. The StormFilter for this site was sized based on both phases in mind. To accommodate the flow rate for the first phase of 0.303 cfs, Stormwater Management recommends using an 8' x 16' precast StormFilter vault, rather than a 6' x 12' vault, with 9 cartridges. The estimated cost of this system is \$27,100, complete and delivered to the job site. This vault is recommended in order to accommodate the additional cartridges needed for the second development phase. This estimate assumes that the vault is less than 6-feet deep. The final system cost will depend on the actual depth of the units and whether extras like doors rather than castings are specified. The contractor is responsible for setting the StormFilter vault and all external plumbing.

The final cost would depend on the actual depth and size of the unit. The precast StormFilter has an internal bypass capacity of 1.8 cfs. Since peak flows from this site exceed 1.8 cfs an external bypass structure is needed, which can be provided by Stormwater Management for an additional cost.

SMI ENGR: EKN

3/18/05

FORM O&M: OPERATIONS & MAINTENANCE PLAN
INSTRUCTIONS (PAGE 2)

1: Fill out Form O&M (Page 3-6)

Project building application number: City staff will insert this number.

Owner: Print the name of the property owner.

Phone no.: Print the area code and 7-digit phone number of the property owner.

Mailing address: Print the property owner's mailing address, including zip code. After the plan is recorded with the county recorder's office, a copy of the recorded O&M Plan will be mailed to this address. The City will also use this address if further correspondence is required.

Site address: Print the address of the property where the stormwater management facility is located.

Site legal description: Print the property's legal description. Property legal descriptions may be obtained from the county assessor's office.

Signature: Sign the O&M plan form under "filer" in the presence of a notary.

Site plan: Include a site plan showing the facility location (in relation to building structures or other permanent monuments on the site), the sources of runoff entering the stormwater facility, and where stormwater will be discharged to after leaving the facility. The site plan can be inserted on Form O&M or included as a separate sheet.

Description of the financial method used to cover future operations and maintenance:
Check the appropriate box.

Party (ies) responsible for maintenance:

Provide the name, address, and phone number (both daytime and after-hours numbers) for the person or company who shall be responsible for maintaining or directly supervising the maintenance of the stormwater facilities described in the O&M Plan.

Maintenance practices and schedule for the stormwater management facility:

Provide the date the O&M Plan was prepared, the date the plan was revised (if applicable), and the month and year of the stormwater management facility installation. Provide the name, firm (if applicable), and address of the person who prepared the O&M Plan.



Project
**NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.**

General Contractor
PERLO MOOREMACK PACIFIC
7190 SW Sandburg Rd.
Portland, Oregon 97223
Phone: (503) 624-2090
Fax: (503) 639-4134

Landscape Architect
**VEDIAN ENVIRONMENTAL
DESIGN**
813 SW Alder
Portland Oregon 97205
Phone: (503) 222-1639
Fax: (503) 222-1853



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USED OR REPRODUCED IN ANY MANNER
WITHOUT PRIOR WRITTEN PERMISSION

REVISIONS:
BY DATE REVISION DESCRIPTION
1 08.16.05
2 IN PROGRESS

SHEET TITLE:
DETAIL SHEET

DRAWN BY: RJH
CHECKED BY: RJH, MWB
SHEET

C8.2

JOB NO. **2040378.00**

CONSTRUCTION SET : 08.16.05

ACODrain DRWG# 1241 Date: 11.21.00 WWW.ACODRAIN.COM	INSTALLATION DRAWING K100S: Load Class E : Concrete Finish	ACO Polymer Products Inc. P.O. Box 245 Chardon, OH 44024 PH: 440-285-7000 FX: 440-285-8517 e-mail: sales@acodrain.com
------------------------------------------------------------------	----------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

NOTES:
1. It is necessary to ensure the minimum dimensions shown are suitable for the existing ground conditions.
2. Engineering advice may be required.
3. A minimum concrete strength of 3000 PSI is recommended. The concrete should be vibrated to eliminate air pockets.
4. Expansion and crack control joints are recommended to protect the channel and the concrete surround.
5. Engineering advice may be required.
6. The finished level of the concrete surround must be approx. 1/8" above the top of the channel edge.
7. Refer to ACO's latest installation instructions for complete details.

THE surface drainage system shall be polymer concrete K100S channel system with galvanized steel or stainless steel K-rods as manufactured by ACO Polymer Products, Inc., Chardon, OH.
Channel shall be manufactured from polyester resin polymer concrete with an integrally cast-in galvanized steel or stainless steel edge rod.
The system shall be 4 inches (100mm) nominal inside width with a 6.1 in. (150mm) overall width and a built-in slope of 0.06". All channels shall be interfacing with a male/female joint. Each channel shall have preformed 4 in. (100mm) round and 6 in. (150mm) oval drain-outs on the bottom for vertical connection with underground piping.
The complete drainage system shall be by ACO Polymer Products, Inc. Any deviation or partial system design and/or improper installation will void any and all warranties provided by ACO Polymer Products, Inc.
Channel shall withstand loading to Load Class E (DIN 19 560). Grate type shall be appropriate to meet the system load class specified and intended application. Grates shall be secured by means of either a boltless locking "push" device or locking bolt and bar. Channel and grate shall be independently certified to meet the specified DIN 19560 load class.
Polymer Concrete shall have material properties of: compressive strength range between 14,000-14,500 psi; flexural strength between 3600-4500 psi; tensile strength of 1500 psi. The material water absorption rate shall not exceed 0.1% by weight and shall be resistant to prolonged salt exposure, repetitive frost cycles and chemically resistant to dilute acids and alkalis.
The system shall be installed in accordance with the manufacturer's instructions and recommendations.
*RFR is required

3
C8.2

8' x 16' PRECAST STORMFILTER DATA DESIGN WATER QUALITY FLOW RATE (CM) 0.548 PEAK FLOW RATE (CM) 7.20 DESIGN PERIOD OF PEAK FLOW (CM) 10.18 # OF CARTRIDGES REQUIRED 20 CORROSIVE FLOW RATE (18 GPM STD) 0.033 MEDIA TYPE LEAF PIPE DATA INLET PIPE #1 21.00 PVC 8" INLET PIPE #2 N/A OUTLET PIPE 19.25 PVC 8" PSI ELEVATION(S) 30.75 31.00 FLOW LADDER ANTI-FLOTATION BALLAST NOTES/SPECIAL REQUIREMENTS	GENERAL NOTES 1.) STORMFILTER BY STORMWATER MANAGEMENT INC., PORTLAND, OREGON 800/548-4667. 2.) FILTERS TO BE SPONGE-ACTUATED AND SELF-CLEANING. 3.) PRECAST CONCRETE VAULT TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C897 AND C898. 4.) STORMFILTER REQUIRES 2.5" OF DROP FROM INLET TO OUTLET. INLET AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR. 5.) PRECAST STORMFILTER EQUIPPED WITH EITHER CORDED OPENINGS OR KNOCKOUTS AT INLET/OUTLET LOCATION. 6.) RECOMMENDED MINIMUM CLEARANCE FOR MAINTENANCE ACCESS. CONTACT SM FOR OTHER OPTIONS IF A SHALLOWER SYSTEM IS REQUIRED. 7.) WITH-FLOTATION BALLAST TO BE SPECIFIED BY ENGINEER IF NEEDED. BALLAST TO BE SET ALONG ENTIRE LENGTH OF BOTH SIDES OF VAULT. BALLAST MATERIALS TO BE PROVIDED BY CONTRACTOR. 8.) ALL STORMFILTERS REQUIRE REGULAR MAINTENANCE. REFER TO OPERATION AND MAINTENANCE GUIDELINES FOR DETAILS. 9.) DETAIL REFLECTS DESIGN INTENT ONLY. ACTUAL VAULT DIMENSIONS AND CONFIGURATION WILL BE SHOWN ON PRODUCTION SHOP DRAWING. 10.) STANDARD DETAIL SHOWS MAXIMUM NUMBER OF CARTRIDGES. EXACT NUMBER REQUIRED TO BE SPECIFIED ON SITE PLANS.
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

8' x 16' STORMFILTER - SECTION VIEW
SCALE: N.T.S.
B-B
1

8' x 16' STORMFILTER - TOP VIEW
SCALE: N.T.S.
2
2

THE STORMWATER MANAGEMENT StormFilter
U.S. PATENT No. 5,822,629,
No. 5,707,627, No. 6,027,639,
No. 5,824,576, AND OTHER U.S.
AND FOREIGN PATENTS PENDING

8' x 16' PRECAST STORMFILTER DETAILS AND NOTES STANDARD DRAWING DESIGNED BY: JH DRAWN BY: JH DATE: 1/22/04 PROJECT NO.: XXXX DRAWING FILE NAME: SFB16.DWG	STORMWATER MANAGEMENT INC. (800) 548-4667
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------

2
C8.2

8' x 16' STORMFILTER - PLAN VIEW
SCALE: N.T.S.
1
1

8' x 16' STORMFILTER - SECTION VIEW
SCALE: N.T.S.
A-A
1

THE STORMWATER MANAGEMENT StormFilter
U.S. PATENT No. 5,822,629,
No. 5,707,627, No. 6,027,639,
No. 5,824,576, AND OTHER U.S.
AND FOREIGN PATENTS PENDING

8' x 16' PRECAST STORMFILTER PLAN AND SECTION VIEW STANDARD DRAWING DESIGNED BY: JH DRAWN BY: JH DATE: 1/22/04 PROJECT NO.: XXXX DRAWING FILE NAME: SFB16.DWG	STORMWATER MANAGEMENT INC. (800) 548-4667
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------

1
C8.2

ACODrain DRWG# 1881 Date: 6/16/04 WWW.ACODRAIN.COM	INSTALLATION DRAWING K900 CB: Load Class E : Concrete Finish	ACO Polymer Products Inc. P.O. Box 245 Chardon, OH 44024 PH: 440-285-7000 FX: 440-285-8517 e-mail: sales@acodrain.com
-----------------------------------------------------------------	------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

NOTES:
1. It is necessary to ensure the minimum dimensions shown are suitable for the existing ground conditions.
2. Engineering advice may be required.
3. A minimum concrete strength of 3000 PSI is recommended. The concrete should be vibrated to eliminate air pockets.
4. Expansion and crack control joints are recommended to protect the catch basin and the concrete surround.
5. Engineering advice may be required.
6. The finished level of the concrete surround must be approx. 1/8" above the top of the catch basin edge.
7. Refer to ACO's latest installation instructions for complete details.
8. Concrete base thickness should match the slab thickness.
9. Rebar or steel mesh reinforcement may be required.
10. Engineering advice may be required.

8' x 16' PRECAST STORMFILTER
DETAILS AND NOTES
STANDARD DRAWING
DESIGNED BY: JH DRAWN BY: JH
DATE: 1/22/04 PROJECT NO.: XXXX DRAWING FILE NAME: SFB16.DWG

4
C8.2

ACODrain DRWG# 1881 Date: 6/16/04 WWW.ACODRAIN.COM	SPECIFICATION CLAUSE K900 Catch Basin System	ACO Polymer Products Inc. P.O. Box 245 Chardon, OH 44024 PH: 440-285-7000 FX: 440-285-8517 e-mail: sales@acodrain.com
-----------------------------------------------------------------	--------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

The catch basin shall be ACO Drain K900 series made from polymer concrete with a stainless or galvanized steel roll coat-in as manufactured by ACO Polymer Products, Inc., Chardon, OH.
The K900 series catch basin will be used in conjunction with 4" ACO DRAIN trench drain model type K100S and shall accept trench drain in ends as shown above.
The catch basin shall be 19.69 in. (500mm) nominal inside length with a 4 in. (100mm) nominal inside width. K900 catch basin depth is 23 in. (585mm).
The complete catch basin and trench drainage system shall be by ACO Polymer Products, Inc. Any deviation or partial system design and/or improper installation will void any and all warranties provided by ACO Polymer Products, Inc.
K900 series catch basin shall withstand loading to Load Class E (DIN 19 560). Grate shall be 4010.
Catch basin, trench channel and grate shall be independently certified to meet the specified DIN 19560 load class.
Polymer Concrete shall have material properties of: compressive strength range between 14,000-14,500 psi; flexural strength between 3600-4500 psi; tensile strength of 1500 psi. The material water absorption rate shall not exceed 0.1% by weight and shall be resistant to prolonged salt exposure, repetitive frost cycles and chemically resistant to dilute acids and alkalis.
The system shall be installed in accordance with the manufacturer's instructions and recommendations.



ENVIRONMENTAL & ENGINEERING CONSULTANTS

3121 SW Moody Avenue, Suite 200, Portland, Oregon 97239
Phone 971.544.2139 | Fax 971.544.2140 | www.MFAinc.org

TRANSMITTAL

PROJECT/TASK NO.: 8006.11.01

TO: Ms. Deborah Soloway
Jordan Schrader
2 Centerpoint Drive, 6th Floor
Lake Oswego, Oregon 97035

DATE: February 15, 2008

RE: Advanced American Construction – EPA 104(e) Information Request

ENCLOSED, PLEASE FIND THE FOLLOWING:

QUANTITY	DESCRIPTION
<u>1</u>	<u>Set of Documents related to Site Investigations</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

FOR YOUR:

 * USE
 APPROVAL
 REVIEW/COMMENTS
 INFORMATION
 OTHER

SENT BY:

 REGULAR MAIL
 FEDEX / AIRBORNE
 UPS
 * COURIER
 OTHER

COMMENTS: Deborah – As promised, I am sending site investigation documents that may be relevant to responding to EPA's questions. These are MFA's and my originals, so we'll need them back at some point. No hurry (b) (6) Anna

By: Anna St. John

AAC000687

RECEIVED

FEB 15 20

**Jordan Schrader Ramis PC
Attorneys at Law**

April 18, 2006
Project No. 0100.01.02

Mr. Mark Pugh
Oregon Department of Environmental Quality—Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, Oregon 97201

Re: Work Plan for Stormwater Sampling
Advanced American Construction Properties, LLC
8444 NW St. Helens Road
Portland, Oregon

Dear Mark:

At your request and on behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster & Alongi, Inc. (MFA) is submitting this work plan for quarterly stormwater sampling at the above-referenced site. The scope of work is in the October 20, 2004, *Source Control Evaluation and Plan* (the Plan) in Attachment B of the November 16, 2004 (recorded November 24, 2004) Prospective Purchaser Agreement (PPA) between AACP and the Oregon Department of Environmental Quality (DEQ).

SITE DEVELOPMENT

The property was developed between 2005 and early 2006. Development included permitting; source control measures, including localized soil excavation and capping; geotechnical investigation and pile driving; grading; off-site disposal of scrapings at Hillsboro Landfill after profiling; receipt and characterization of imported fill from the former Columbia Villa property in North Portland; installation of utilities; building and stormwater-system construction; and paving and landscaping (see the attached chronology). A report summarizing development of the site is being prepared.

STORMWATER SAMPLING

Pursuant to Sections 2B(1) and (2) of the PPA, AACP will implement source control measures and best management practices (BMPs) outlined in the Plan, including installation of a stormwater-management system during site development, and, once constructed, quarterly sampling of the system for one year for analysis of metals,

polycyclic aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH), as required by the PPA. The attached figure shows the stormwater-system layout. Samples will be collected from AACP's outfall to the Willamette River (see the attached photographs). One of the four sampling events will be conducted during the first significant rain following the summer ("first-flush"). Stormwater samples will be collected as follows:

1. Sample containers will be ordered from the contract laboratory. Samples will be collected and analyzed for total arsenic, cadmium, chromium, copper, lead, nickel, and zinc; PAHs; and TPH.
2. Stormwater samples will be collected using a specific collection container dedicated to this purpose. The sample location is the outfall to the river.
3. Field notes will be recorded during collection, noting time, location, weather, stormwater characteristics, etc.
4. Sample containers will be completely filled. Containers with preservative will be carefully filled to avoid losing any preservative.
5. The labels on the sample containers will be completed with the sample ID, date, time, sampler, and requested analyses.
6. Sample containers will be temporarily stored in coolers with ice, with appropriate chain-of-custody documentation, until they are received at the laboratory.

STORMWATER ANALYSES

In accordance with the quality assurance/quality control requirements, the analytical laboratory will perform stormwater analyses using U.S. Environmental Protection Agency (USEPA) 1986 SW-846 methods¹ unless otherwise noted.

Stormwater samples will be analyzed for metals by USEPA Method 6010/6020; for PAHs by USEPA Method 8270C-SIM; and for TPH by NWTPH-Gx and -Dx for gasoline- and diesel-range organics, respectively. MFA will ensure that method reporting limits do not exceed DEQ's 2001 ecological screening level values (SLVs) or the December 2005 USEPA/DEQ Portland Harbor Joint Source Control Strategy SLVs for surface water, if

¹ USEPA, Test methods for evaluating solid waste, physical/chemical methods. SW-846. 3d ed. U.S. Environmental Protection Agency. November 1986.

Mr. Mark Pugh
April 18, 2006
Page 3

Project No. 0100.01.02

attainable. Additional analytes may be specified in the stormwater permit. If contaminant concentrations are detected above the source control screening criteria, AACP will implement BMPs to minimize contaminants in stormwater.

STORMWATER REPORTING

Pursuant to Section 2B(2) of the PPA, a stormwater monitoring report will be submitted to DEQ within 14 days of receipt of the laboratory data.

Please call me or Scott Burgess at AACP (503-650-8207) with your approval to proceed with the above scope of work.

Sincerely,

Maul Foster & Alongi, Inc.



Anna St. John, RG
Project Manager

Attachments: Chronology of Site Development
Stormwater System Layout
Photographs of Stormwater Outfall to the Willamette River

cc: Dee Burch and Scott Burgess, AACP

CHRONOLOGY OF SITE DEVELOPMENT

ADVANCED AMERICAN CONSTRUCTION, INC.
Storm Water Sampling Plan for DEQ

Site Redevelopment Chronology

March 8, 2005	NPDES 1200-C permit issued (Exp. 12/31/05)
March 29, 2005	Storm water O&M plan recorded
March 30, 2005	Demolition permit issued
May 23, 2005	Greenway permit approval
May 2005	Demolition of structures
July 20, 2005	Grading
August 16, 2005	Building permit issued
August 12, 2005	Pile driving and foundation begun
August 17, 2005	Plumbing permit issued (sanitary and storm lines)
October 2005	Storm water vault installed
October 27, 2005	Paving (1st lift)
December 28, 2005	NPDES permit renewed (Expiration: 11/30/2010)
March 29, 2006	Storm water system operational
May 1, 2006 (est.)	Occupancy

STORMWATER SYSTEM LAYOUT

GROUP
MACKENZIE

Civil Engineering
Structural Engineering
Transportation Planning
Portland OR
503.224.8860

Architecture
Interior Design
Land Use Planning
Tacoma WA
253.471.0551

206.748.9993

Client

AAC.LOGO.TIF

Project
NEW FACILITY FOR
ADVANCED AMERICAN
CONSTRUCTION INC.

General Contractor
PERLO MCCORMACK PACIFIC
7190 SW Sandburg Rd.
Portland, Oregon 97223
Phone: (503) 624-2090
FAX: (503) 639-4134

Landscape Architect
VRIDIAN ENVIRONMENTAL
DESIGN
813 SW Alder
Mezzanine B
Portland Oregon 97205
Phone: (503) 222-1639
FAX: (503) 222-1853



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REVISIONS:			
NO.	REVISIONS	REVISION DELTA	DATE
NO.	NO.	NO.	NO.
1	X	08.16.05	
2	X	IN PROGRESS	

SHEET TITLE:
UTILITY PLAN

DRAWN BY: RJH
CHECKED BY:
SHEET

C2.3

JOB NO. 2040378.00

**PHOTOGRAPHS OF STORMWATER OUTFALL
TO WILLAMETTE RIVER**







Word Processing & Document Production Form

Project #: 0100.01.01

Task #: _____

Billable: ☒ Yes ☒ No

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MEMORANDUM

TO: Mark Pugh: Oregon Department of Environmental Quality DATE: August 13, 2004
FROM: Jeffrey Peterson, PhD; Anna St. John, RG; and Madi Novak PROJECT: 0100.01.01
RE: Screening-Level Risk Evaluation for Soil and Groundwater, Marine Finance Corporation
Property, Portland, Oregon

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster and Alongi, Inc. (MFA) has prepared this Technical Memorandum (Memorandum) summarizing results of previous environmental investigations performed at the Marine Finance Corporation (MFC) property at 8444 N.W. St. Helens Road, Portland, Oregon (see Figure 1). AACP is currently negotiating a Prospective Purchaser's Agreement (PPA) for the property with the Oregon Department of Environmental Quality (DEQ). To focus the scope of work for the PPA, this Memorandum evaluates existing site assessment data and identifies environmental media, locations, and chemicals that may require further investigation to define risks that contaminants may pose to human health and the environment. The elements for the Memorandum were discussed with the DEQ during a meeting on August 2, 2004, and outlined in an August 2, 2004, technical memorandum. DEQ approved the elements of the Memorandum via electronic mail on August 3, 2004.

This Memorandum evaluates only contaminants that have been detected in soil and groundwater of the upland part of the site. It is our understanding that potential sediment contamination in the adjacent Willamette River will be addressed separately, and the PPA for the property will focus on the upland part of the site.

Based on the results of the preliminary risk screening, MFA recommends that the costs and benefits associated with implementing a program to manage contaminants in soil should be weighed against the costs and potential benefits of performing additional investigations aimed at better characterizing potential risks. It is possible that the costs of sampling and analysis to better evaluate whether contaminants in soil may migrate to sediment of the river could approach costs associated with implementing a source control measure (e.g., capping of nearshore soil). Because the benefits of additional investigations are uncertain, MFA asserts that it is more protective and cost-effective to manage soil based on preliminary risk assessment findings, instead of performing additional assessment.

BACKGROUND

This section provides a brief description of background information such as site setting, site history, and current and reasonably likely future beneficial uses of land and water. The background information provides the conceptual foundation for the risk evaluation. More detailed descriptions of relevant background information are presented in the Phase One Environmental Assessment Report (PBS Environmental [PBSE], 1993), the Preliminary Assessment and Expanded Preliminary Assessment Work Plan (Jacobs Engineering Group, Inc. [Jacobs], 2000a), the Expanded Preliminary Assessment

Data Report (XPA) (Jacobs, 2000b), and the Phase II Environmental Site Assessment (Phase II ESA) (GeoDesign, Inc. [GeoDesign], 2003).

Site Description

The MFC site includes approximately 7.46 acres of land along the west bank of the Willamette River in Portland, Oregon (see Figure 1). The St. Johns Bridge passes over the site, and approximately two-thirds of the property is located north of the bridge (see Figure 2). The property is flat to gently sloping toward the river. The site is located in section 11, township 1N, range 1W, Willamette Meridian.

Presently the site is used for temporary equipment storage for painting of the St. Johns bridge and tug boat moorage and operations. Structures at the site include two metal Quonset huts, a wood-frame modular office building, a small trailer house, a small wooden shed, and a floating-home builder's dock, as well as a gangway and docks leased by a tug boat company, Hendren Tow Boat. The actively used areas of the site have limited vegetative cover and consist mostly of gravel. A riprap-armored embankment is located adjacent to the river.

Site History

Historically, a number of businesses that may have handled hazardous substances have operated at the site. Since the 1920s or earlier, the site has been used by various marine construction and tow boat/barge companies (PBSE, 1993). Metal salvage operations occurred at the site in the 1980s and 1990s. Also, three underground storage tanks (USTs) were removed from the site in 1988. These USTs were used to store diesel and gasoline, and may have been used to supply fuel to river vessels.

Previous Investigations

In 1997, the U.S. Environmental Protection Agency (USEPA) conducted a study of sediments of the Lower Willamette River (USEPA, 1998). As part of this study, a subsurface sediment sample was collected adjacent to the subject site, and surface sediment samples were collected both upstream and downstream of the site. Concentrations of several chemicals were elevated above apparent baseline values for the Portland Harbor in the sediment sample collected adjacent to the site. Also, the concentrations of several chemicals in samples collected upstream and downstream of the site were lower than those in the sample collected adjacent to the site.

In August 2000, Jacobs (a contractor for the DEQ) began an investigation that included collecting six groundwater samples, five Willamette River sediment samples, 13 soil samples, and two surface water samples. Samples were collected at locations where contaminants may have been released, based on information regarding historical site operations. Soil, groundwater, and surface water samples were analyzed for metals, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and butyltins.

Jacobs (2000b) reported that TPH was detected in surface soil at most sample locations. Also, Jacobs noted that concentrations of several metals were elevated above natural background levels in soil at several locations. Two VOCs were detected in surface soil samples, but none was detected in subsurface soil. Several SVOCs were detected in both surface and subsurface soil. PCBs were not detected in any soil sample. Tri-n-butyltin (TBT) was observed in soil at several locations. Also, several chemicals were detected in groundwater grab samples at concentrations above the respective USEPA Region 9 Preliminary Remediation Goals (PRGs) for tap water (Jacobs, 2000b).

Based on a review of the Jacobs investigation results, the DEQ identified additional tasks necessary to complete characterization of the nature and extent of chemical impacts to the upland part of the site. These tasks included: 1) soil sampling from two or more discrete depth intervals at locations with the highest contaminant levels in surface soil (SS-2, SS-7, SS-9) and from the former UST location; 2) quarterly monitoring of groundwater (one-year minimum) at approximately six locations across the eastern part of the site to assess shallow groundwater contaminants potentially discharging to the Willamette River; and 3) collection of additional surface soil samples from approximately ten locations to better characterize the lateral extent of surface contamination. In April 2003, GeoDesign began a phased investigation of soil and groundwater to address the assessment tasks identified by the DEQ.

The Phase II ESA report presented analytical results of subsurface soil samples and the first round of groundwater monitoring (GeoDesign, 2003). It was reported that diesel- and heavy-oil-range hydrocarbons were detected in two of the eight subsurface soil samples analyzed. Reported concentrations were below the DEQ's Level 1 Soil Matrix Cleanup Standard. Three subsurface soil samples were analyzed for VOCs; and 2-chlorotoluene was detected in one of the samples. Eleven subsurface soil samples were analyzed for polycyclic aromatic hydrocarbons (PAHs), and several PAHs were detected in soil samples. Of the metals analyzed in soil, only arsenic and lead were reported at concentrations above a potentially relevant PRG (GeoDesign, 2003).

Six groundwater monitoring wells were installed at the site to characterize chemical concentrations in shallow groundwater that may discharge to the Willamette River. The initial groundwater monitoring event was performed in April 2003 (GeoDesign, 2003). The highest detected concentration of total arsenic in groundwater was above the tap water PRG, and the highest total lead concentration in groundwater was above a potentially applicable DEQ Risk-Based Concentration (RBC). Several PAHs were detected at concentrations below potentially relevant RBCs and PRGs. VOCs were not detected in groundwater samples (GeoDesign, 2003).

GeoDesign conducted additional groundwater sampling events in July 2003 and April 2004. Also, surface soil samples were collected in August 2003. These additional soil and groundwater sample results were not included in a report, but are presented and evaluated in this Memorandum.

Chemicals of Interest

Based on findings of the above investigations, the chemicals of interest (COIs) in soil include metals, TPH, PAHs, VOCs, and butyltins. COIs for groundwater include metals and PAHs.

Geology and Hydrogeology

The geology of the region is characterized generally by a broad structural depression or basin bordered by the Cascade Mountains on the east and the Coast Range Mountains on the west (Jacobs, 2000b). Geologic formations in the basin are also folded and dissected by a number of northwest-trending faults. The Tualatin Mountains form a northwest-trending anticlinal ridge that is faulted along its eastern flank by the Portland Hills fault. The Willamette River flows along the base of the eastern side of the Tualatin Mountains. A number of additional faults are located approximately parallel or perpendicular to the Portland Hills fault and are mapped along or near the Tualatin Mountains. An inferred graben is identified immediately southeast of the site.

The site is constructed on what is likely a combination of fill material and natural terrace deposits created by the Willamette River. Fill material appears to be present from ground surface to approximately 18 to 23 feet below ground surface (bgs). Wood chips were noted in at least two boreholes at the contact between presumed fill and native material (Jacobs, 2000b). Also, aerial photographs from 1938 and 1940 and from 1961 and 1972 indicate that a significant amount of fill material was added to the site during both of these periods (Jacobs 2000a).

Terrace deposits unconformably overlie alluvium of the Willamette River basin. These deposits are of Pleistocene age and are composed of indistinguishable, unconsolidated, stratified sand and silt. The terrace deposits at the site are approximately 10 feet thick, while the alluvium deposits are known to have a maximum thickness of 100 feet. Columbia River basalts are believed to underlie these alluvial deposits at various depths near the site. Lacustrine deposits consisting of unconsolidated boulders, gravels, sand, and silt with a thickness on the order of hundreds of feet lie beneath the alluvium deposits. The Pliocene Troutdale Formation typically underlies the alluvial deposits in the region and consists of conglomerate, sandstone, shale, and mudstone. The thickness of the Troutdale Formation ranges from zero to more than 1,100 feet.

Groundwater is approximately 7 to 24 feet bgs, depending on location and season based on static water-levels measured in on-site monitoring wells (Table 1). In May 2003, the hydraulic gradient was east-northeast toward the Willamette River at a gradient of approximately 0.045 vertical feet per lineal foot (GeoDesign, 2003).

Beneficial Uses of Land and Water

One of the first steps in risk assessment is identification of the mechanisms by which human and ecological receptors may be exposed to site-related chemicals. In order to define relevant exposure pathways, it is important to understand how land and water are used at a site and how they are likely to be used in the future. The current and reasonably likely future beneficial uses of land and water at and near the site are discussed below.

The site currently is used to support commercial and industrial operations, and has been used as a commercial/industrial property since at least the 1920s (PBSE, 1993). No residences are present on the site, and with the possible exception of a private dwelling located on the site in the 1930s, the site has

not been used to support residential developments in the recent past. Riverfront properties near the site are used for industrial purposes. Land west of St. Helens road near the site is a mix of residential, commercial, industrial, and recreational properties (Jacobs, 2000a).

It is likely that the property will continue to be used for commercial and industrial purposes in the foreseeable future. The site has been used historically and is used currently for commercial and industrial purposes, and neighboring riverfront properties also are used for these purposes. In addition, the prospective purchaser (AACP) is planning to use the site for commercial/industrial purposes. It is unlikely that the site will support residences in the foreseeable future.

Groundwater beneath the site is not being used as a source of drinking water (Jacobs, 2000a). On-site facilities are currently supplied with municipal water. It appears that the site has been supplied with municipal water since the 1920s (PBSE, 1993).

Based on water use information in Jacobs (2000a), 52 water wells are located within a 1-square-mile area around the site. Three of these wells were identified as water supply wells, and one of the water supply wells was listed as abandoned. The two wells that are presumed to be active are located upgradient of the site. Results of the well search indicate that groundwater near the site is not being used for irrigation, industrial, engineering, or livestock-watering purposes. Also, there is no trend to indicate that consumptive uses of groundwater are increasing near the site.

Shallow groundwater at the site may discharge to the Willamette River. The Willamette River supports a number of highly valued aquatic organisms, and groundwater contributions to aquatic habitats in the river is an important beneficial use. Current surface water uses of the Willamette River in the region include aesthetic quality, recreation (including recreational and subsistence fishing), transportation, wetlands, fishing and hunting, and fish and wildlife habitat (including anadromous fish passage).

In summary, it appears unlikely that shallow groundwater at the site will be used as a water supply source for domestic, agricultural, or industrial purposes in the foreseeable future. Municipal water is reliable and relatively inexpensive, and is likely to remain the sole water source for the site in the near future. The most important beneficial use of groundwater at the site appears to be possible discharge to the Willamette River.

Conceptual Site Model

The conceptual site model (CSM) describes potential chemical sources, release mechanisms, environmental transport processes, and receptors. The primary purpose of the preliminary CSM is to identify potential pathways by which human and ecological receptors may be exposed to site-related chemicals. The processes by which these receptors may be impacted by site-related chemicals are then investigated and evaluated. Potential exposure scenarios that involve human receptors are presented in Figure 3, and those involving ecological receptors are presented in Figure 4. The CSM for the site is discussed below.

Concentrations of several metals in surface soil samples appear to be elevated above background levels (Jacobs, 2000b). Metals may have been released on the surface as a result of historical metal salvage operations at the site.

Based on visual observations of stained surface soil and the results of TPH analyses, it appears that surface releases of petroleum products have occurred at the site. There also have been documented subsurface releases of petroleum products from the former USTs (Jacobs, 2000a).

The primary mechanisms that affect transport and fate of released petroleum products include leaching to groundwater, volatilization from soil or groundwater to air, advection and dispersion in groundwater, sorption to the soil matrix, and natural degradation processes. Similar processes structure the fate of metals in the environment, although volatilization is insignificant for most metals. Also, the fate of metals in soil and groundwater can be strongly determined by reduction/oxidation conditions and pH. The relative importance of these various processes in structuring the dynamics of contaminant fate and transport vary, depending on the chemical and physical properties of a released contaminant. The properties of soil and the dynamics of groundwater flow also shape contaminant fate and transport.

Precipitation that falls on the site can percolate through the vadose zone, and it is possible that chemicals with relatively high solubility may leach from soil to pore water. Also, when the water table rises and interacts with chemicals sorbed to soil, some may partition into groundwater. Once in groundwater, dissolved contaminants may be transported by diffusion and advection in groundwater horizontally away from the original source. Dispersion, retardation, and biodegradation may act to reduce dissolved concentrations of chemicals in groundwater downgradient of the source area.

Some volatile contaminants that are either adsorbed to soil or dissolved in groundwater may volatilize to soil pore spaces. Chemical vapors in pore spaces may eventually migrate through the soil matrix and enter outdoor air. Once in outdoor air, mixing with ambient air is expected to reduce airborne chemical concentrations rapidly and substantially. If buildings are located over soil or groundwater that has been contaminated with volatile chemicals, it is possible that vapors may eventually enter indoor air by penetrating cracks in a building floor or foundation.

Petroleum hydrocarbons and metals have been detected in surface soil (less than 3 feet bgs) at several locations. It is assumed that workers (occupational, construction, and excavation) can have direct contact with chemicals in surface soil. Direct contact exposure routes include incidental soil ingestion, inhalation of vapors or particulates, and dermal contact with soil.

The vadose zone is the relatively unsaturated layer of soil that lies above the water table. Soil at or below the water table is assumed to be saturated. Over most of the site, the lower extent of the vadose zone is at least 12 feet bgs (see Table 1). It is assumed that there are three pathways by which on-site workers could have direct or indirect exposure to chemicals found in subsurface vadose zone soil. First, it is assumed that volatile chemicals in the vadose zone could migrate through the soil matrix and enter outdoor air where they could then be inhaled by outdoor workers. Also, vapors from chemicals in the vadose zone could possibly migrate to the foundation of a building, penetrate the building through cracks in the foundation, and enter indoor air where they could then be inhaled by indoor workers.

Finally, it is assumed that construction and excavation workers could expose and contact chemicals in subsurface soil. However, it should be noted that very few volatile chemicals have been detected in soil, and most COIs for the site do not have properties that would allow for significant vapor phase migration to indoor or outdoor air.

Groundwater at the site is not used for drinking purposes. It is assumed that on-site workers could be exposed to volatile hydrocarbons that migrate from groundwater to indoor or outdoor air. Because the depth to groundwater over most of the site is below the depth of most excavations (approximately 10 feet bgs), it is unlikely that potential future excavations at the site would extend to groundwater. Also, in the unlikely event that an excavation were developed below the water table, Occupational Safety and Health Administration rules require that excavations be dewatered before worker entry. As a result, it is unlikely that future excavation workers could have substantial direct contact with chemicals in groundwater.

The DEQ soil RBCs and USEPA Region 9 PRGs for the leaching to groundwater pathway do not appear to be relevant compliance conditions for the site. These soil screening values are estimated using models that simulate partitioning of chemicals from soil to groundwater, and they are designed to protect groundwater that is used for drinking purposes. As mentioned previously, shallow groundwater is not used for drinking purposes at the site. Also, empirical data regarding groundwater quality are available to evaluate risks associated with exposure to impacted groundwater. As a result, model estimates that predict chemical concentrations in groundwater are not necessary for the risk evaluation because actual groundwater quality data can be used for this purpose.

It is unlikely that terrestrial ecological receptors could have significant exposure to site-related chemicals in soil. The site is an active commercial/industrial facility with no significant terrestrial ecological habitats. Also, it is unlikely that the site will be developed to support natural habitats in the future. Commercial and industrial activities at the site are expected to limit wildlife foraging activities that could lead to exposure to chemicals in soil.

Stormwater runoff and other processes could possibly transport chemicals in surface soil to the adjacent Willamette River where particles could eventually settle as sediment. Sediment-dwelling biota could then contact chemicals in sediment. Also, waterborne chemicals in groundwater could be transported to the Willamette River. If shallow groundwater discharges to the river, sediment-dwelling biota could be exposed to chemicals in sediment pore water. Upon groundwater discharge to the river, mixing with ambient surface water is expected to substantially reduce waterborne concentrations of site-related chemicals. However, it is possible that relatively pelagic aquatic species could be exposed to chemicals in surface water of the river.

In summary, the primary pathways by which human and ecological receptors may contact chemicals in soil and groundwater are as follows:

- Commercial/Industrial workers may directly contact (e.g., ingestion, dermal contact, inhalation) chemicals in surface soil.

- Commercial/Industrial workers may have indirect exposure to volatile chemicals that migrate from soil or groundwater to indoor or outdoor air.
- Excavation and construction workers may directly contact (e.g., ingestion, dermal contact, inhalation) chemicals in surface and subsurface soil.
- Sediment-dwelling biota may contact chemicals that migrate from soil via overland flow to sediment of the Willamette River.
- Aquatic ecological receptors (including sediment-dwelling biota) may contact chemicals that migrate from shallow groundwater to surface water and sediment of the Willamette River.

SCREENING LEVEL RISK ASSESSMENT

To identify media and contaminants that may require additional investigation, a screening-level risk evaluation was performed. Available analytical results from upland soil, groundwater, and surface water samples were assembled into tables. These results were compared to relevant risk-based screening concentrations for the above exposure scenarios. Screening assessment methods and findings are described below.

Data Evaluation

Analytical results used in this screening level risk evaluation were from the following sources: the XPA (Jacobs, 2000b), the Phase II ESA (GeoDesign, 2003), and supplemental surface soil and groundwater data from GeoDesign that had not been included in a written report. The previously unreported data included results of groundwater sampling events performed in July 2003 and April 2004 and results of surface soil samples collected in August 2003. The sources for sample results are summarized in Table 2. The analytical program for each sample and comments on data quality are also included in Table 2.

Soil and groundwater samples were collected from locations that have the potential to be impacted by contaminants of interest (e.g., a former drum storage area, a former warehouse, near former USTs, in areas where soil staining was noted, and downgradient areas). Surface water samples were collected from a seep pool and stand pipe downgradient of potentially impacted areas. Groundwater samples were collected from wells installed close to the shoreline to assess shallow groundwater contaminants potentially discharging to the Willamette River. Sample locations are depicted in Figure 2. In general, soils were analyzed for TPH, VOCs, PAHs, metals, and butyltins, and water samples were analyzed for VOCs, SVOCs, and metals.

Groundwater samples collected in April 2003 were analyzed for total metals. Samples collected in July 2003 and April 2003 were analyzed for dissolved metals.

The receipt and reduction of the analytical data for each source are described below.

- Phase II ESA and supplemental surface soil and groundwater data were received as data table summaries in electronic worksheets from GeoDesign. MFA updated the presentation of the data (e.g., changed ND<0.500 to 0.500 U) but did not change any values or qualifiers. The data include detections and reporting limits for nondetected analytes. Values were not verified against laboratory deliverables.
- XPA data were received as data table summaries generated by Jacobs in hardcopy format. The data were entered into an electronic worksheet by MFA. The data table summaries did not include reporting limits for nondetected analytes. Values were not verified against laboratory deliverables.

The quality of the data either is unknown or has not been verified by MFA. Table 2 elaborates on the status of data quality for each group of samples.

Risk Screening Methods

Concentrations of COIs in soil, groundwater, and surface water are compared with relevant risk-based screening concentrations for each potential exposure scenario. The risk-based screening values are conservative estimates of threshold concentrations for adverse effects, given long-term exposure to contaminated environmental media. Various risk-based screening values have been calculated using target risk levels that are consistent with DEQ's acceptable risk levels. If concentrations of a COI are below the relevant risk-based screening value for a particular exposure scenario, it is inferred that the chemical will not pose unacceptable risks to the target receptor. If concentrations of a COI are greater than a relevant risk-based screening value, it is inferred that the chemical has the potential to pose unacceptable risks and should be further evaluated.

Soil

To evaluate potential risks that workers might experience if they were exposed to metals or TBT in surface and subsurface soil, concentrations of these COIs were compared to USEPA Region 9 PRGs protective of industrial workers (USEPA, 2002a). The USEPA PRGs for carcinogens have a target risk level of one in a million (10^{-6}) excess cancer risk, and the target risk level for noncarcinogens is a hazard quotient of one. These PRGs consider incidental soil ingestion, inhalation of windborne soil particulates, and dermal contact with soil. Most metals are not volatile at ambient temperatures, and volatilization to indoor and outdoor air are considered insignificant exposure pathways. The PRGs for metals are presented in Tables 3 and 6, and the PRG for TBT is presented in Tables 5 and 8.

Based on site history and descriptions of soil sampling locations (Jacobs, 2000a; GeoDesign, 2003), it is likely that most of the detected TPH and PAHs originated from petroleum releases. Therefore, generic RBCs from the DEQ's Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites (DEQ, 2003) were used to evaluate TPH and PAHs in soil.

DEQ RBCs for TPH and PAHs in surface and subsurface soil are presented in Tables 4 and 7, respectively. The RBCs for occupational, construction, and excavation workers are based direct contact

exposure routes such as incidental soil ingestion, inhalation of vapors or particulates, and dermal contact. Most of the petroleum constituents detected in soil at the site do not have chemical and physical properties that would cause them to volatilize and migrate in the vapor phase to indoor or outdoor air under natural conditions. Because these COIs cannot pose unacceptable risks through these indirect exposure scenarios (i.e., vapor migration), no generic RBCs have been listed by the DEQ (2003), and the pathways are not included in Tables 4 and 7.

No DEQ RBCs were available for the three VOCs detected in either surface or subsurface soil. Concentrations of these VOCs were compared with USEPA Region 9 industrial worker PRGs for soil (Tables 4 and 7).

To evaluate the potential for COIs in soil to migrate to Willamette River sediment at levels that may pose unacceptable risks to sediment-dwelling biota, concentrations in surface soil were compared with probable effect concentrations (PECs) for sediment (Tables 2 and 4). Comparison of soil concentrations to sediment PECs has been used to evaluate the potential for soil to impact sediment at other sites in Portland Harbor. A PEC is the concentration of a chemical in sediment that is associated with adverse effects in sediment toxicity tests. For a variety of reasons, some PECs are better predictors of chemical toxicity than others (MacDonald et al., 2000). For the purposes of this evaluation, only consensus-based PECs that were classified as reliable indicators of sediment toxicity (see MacDonald et al., 2000; Ingersoll et al., 2000) were used as soil screening values. Unlike many other PECs, reliable consensus-based PECs have been demonstrated to correctly predict the toxicity of chemicals in over 75 percent of the sediment samples evaluated (see MacDonald et al., 2000; Ingersoll et al., 2000).

PAHs are the primary soil COIs that could migrate to sediment and potentially bioaccumulate in the aquatic food chain. In general, PAHs are metabolized by vertebrates (i.e., fish, birds, mammals) and tend not to accumulate in tissues. However, some PAHs can bioaccumulate from sediment into tissues of some aquatic invertebrates, and fish or other consumers of aquatic biota may contact PAHs through their diets. Consistent with the approach used at other sites, DEQ screening level values (SLVs) for bioaccumulative PAHs in sediment were also used to evaluate the soil-to-sediment migration pathway (Table 4). The only PAH in soil for which a sediment bioaccumulation SLV was available was benzo(a)pyrene (DEQ, 2001).

The process for evaluating the linkages between concentrations of COIs in soil and potential risks that chemicals may pose to aquatic biota exposed to sediment is conservative and involves several sources of uncertainty. A number of factors are expected to reduce concentrations of COIs as they migrate in stormwater runoff from soil to sediment (e.g., mixing with ambient soil or sediment). Also, the media containing a COI may affect chemical toxicity. For example, the toxicity of sediment to benthic invertebrates is largely a function of the concentrations of chemicals in sediment pore water. Many benthic organisms receive a substantial portion of their total exposure through gill uptake of COIs that have partitioned into sediment pore water. A similar process is unlikely to be an important indicator of the toxicity of chemicals in soil (e.g., chemical partitioning into the voids in a soil matrix).

No reliable PEC was available for TBT. To evaluate whether TBT in surface soil can migrate to the Willamette River at unacceptable levels, soil concentrations were compared to the apparent baseline

concentration of TBT in sediment of the Lower Willamette River (USEPA, 1998). Surface soil concentrations were also compared to the DEQ bioaccumulation SLV for TBT in sediment (DEQ, 2001).

Groundwater

It is unlikely that human or ecological receptors can directly contact site-related COIs in groundwater. However, if COIs were to migrate in groundwater and discharge to the Willamette river, benthic organisms could contact these chemicals in sediment pore water at the groundwater/surface water interface, and other aquatic organisms could contact COIs in surface water. Also, it is assumed that if COIs were to migrate to surface water, they could bioaccumulate in fish tissues, and recreational fishers could contact these chemicals if they consumed fish harvested near the site.

To evaluate COIs in groundwater, it was assumed that aquatic organisms (including harvestable fish) would have long-term exposure to concentrations observed in groundwater. As a result, concentrations of COIs in groundwater were compared to both DEQ SLVs protective of aquatic biota (DEQ, 2001) and USEPA ambient water quality criteria for humans that harvest and consume fish (USEPA, 2002b). Groundwater screening values for metals are presented in Table 9, and those for organic COIs are presented in Table 10.

For a variety of reasons, the groundwater risk evaluation is conservative and is likely to overestimate potential risks. First, concentrations of site-related contaminants in groundwater are expected to attenuate along the flow path from the chemical source to the Willamette River. If shallow groundwater discharges to the Willamette River, concentrations at the discharge boundary are expected to be lower than those measured in upland monitoring wells. Also, mixing with ambient water of the river either at or below the sediment/water interface is expected to cause a substantial decline in waterborne concentrations of COIs. As a result, actual human or aquatic receptors are likely to experience COI concentrations well below those observed in groundwater.

Surface Water

As reported in the XPA (Jacobs, 2000b), a surface water sample was collected from each of two small surface water features at the site. No VOCs or SVOCs were reported above method reporting limits (MRLs) in surface water samples (Jacobs, 2000b). However, several metals were detected in surface water. For the purposes of this risk screening evaluation, it is assumed that aquatic organisms (including harvestable fish) would have long-term exposure to metals observed in surface water. Concentrations of metals in surface water samples were compared to both DEQ SLVs protective of aquatic biota (DEQ, 2001) and USEPA ambient water quality criteria for humans that harvest and consume fish (USEPA, 2002b). Surface water screening values for metals are presented in Table 11.

Results

Results of the screening level risk evaluation for surface soil, subsurface soil, and groundwater are discussed below.

Surface Soil

As shown in Table 3, USEPA Region 9 industrial soil PRGs were available for 19 of the 23 chemicals evaluated in surface soil. With the exception of arsenic, concentrations of all metals in surface soil were below relevant PRGs. With the possible exception of arsenic, concentrations of metals in surface soil are not expected to pose unacceptable risks to human health.

Arsenic concentrations in 19 of the 21 surface soil samples were above the USEPA industrial soil PRG (Table 2). However, naturally occurring concentrations of arsenic in soil over much of western North America are above this PRG (USEPA, 2002a). The median concentration of arsenic in the 21 surface soil samples collected at the site is 4.1 milligrams per kilogram (mg/kg) (see Table 3). As reported by GeoDesign in the Phase II ESA (GeoDesign, 2003), the median concentration of arsenic in surface soil at the site is within the range of naturally occurring arsenic in soil at other locations in the region. Much of the soil at the site comprises fill material that may have been brought in from several different locations. It is possible that natural arsenic levels in fill material can differ depending on source location. Because of the heterogeneous nature of soil at the site, it may require a relatively large set of soil data to characterize "natural" levels of arsenic in surface soil with sufficient accuracy to distinguish potential anthropogenic arsenic contributions from natural levels.

Overall, there is little evidence to suggest that metals in surface soil may migrate to the Willamette River at concentrations that may pose unacceptable risks to sediment-dwelling biota. The concentration of copper in soil from sample location SS-9 was 270 mg/kg and above the reliable consensus-based PEC of 149 mg/kg for copper (see Table 3). Also, the concentration of lead in soil from sample location SS-21 was 136 mg/kg, which is slightly above the PEC of 128 mg/kg (see Table 3).

The concentrations of diesel-range petroleum hydrocarbons in surface soil are below generic RBCs for TPH as diesel (see Table 4). Also, TPH concentrations are below the estimated residual saturation concentration (a level that may indicate the presence of mobile product) of 10,000 mg/kg (DEQ, 2003). Although no attempt was made to formally score the site using DEQ's Soil Matrix standards, it is most likely that the Level 2 Soil Matrix Cleanup Levels would be applicable. The Level 2 Soil Matrix Cleanup Level for diesel or other nongasoline petroleum hydrocarbon contamination is 500 mg/kg. The concentration of TPH as diesel in the soil from sample location SS-6 was above this soil matrix concentration, and heavy-oil-range TPH concentrations in soil samples from SS-6 and SS-12 exceeded the soil matrix level.

The composition of heavy oil petroleum products is variable, and the DEQ has not developed generic RBCs for heavy-oil-range petroleum hydrocarbon mixtures (DEQ, 2003). Instead, at sites requiring a risk evaluation for heavy-oil-range hydrocarbons, site-specific RBCs may be developed using TPH fraction data. The composition of the petroleum product can be characterized using the method for determining extractable petroleum hydrocarbon fractions, and with these composition data, a product-specific RBC can be developed (DEQ, 2003). The lack of heavy-oil-range hydrocarbon fraction information is a data gap for the site. However, the generic RBCs for TPH as diesel assume a fresh diesel formulation (DEQ, 2003), and fresh diesel is likely to be more toxic than most heavy-oil-range petroleum products. The heavy-oil-range TPH concentrations are below generic RBCs for diesel.

Eighteen PAHs were detected surface soil samples collected at the site (see Table 4). DEQ RBCs were available for 13 PAHs. With the exception of benzo(a)pyrene, the maximum detected concentrations of all PAHs in surface soil were below relevant DEQ RBCs (see Table 4). Concentrations of benzo(a)pyrene in soil from sample locations SS-7, SS-12, SS-16, and SS-21 were above the DEQ RBC for occupational workers.

Reliable consensus-based PECs were available for six of the 18 PAHs detected in surface soil (see Table 4). The maximum detected concentrations of all PAHs were below relevant PECs. However, PAHs almost always occur in soil and sediment as a complex mixture of covarying compounds. To evaluate the toxicity of PAH mixtures, the mixture is often expressed as the sum of the concentrations of individual PAHs (total PAHs), and sediment toxicity is predicted based on comparisons with sediment quality guidelines for total PAHs (MacDonald et al., 2000). As shown in Table 4, concentrations of total PAHs in all surface soil samples were below the reliable consensus-based PEC. Therefore, it is inferred that PAHs in surface soil are unlikely to migrate to sediment of the Willamette River at concentrations that may cause adverse effects to sediment-dwelling biota.

If PAHs in soil were to migrate to sediment, some of these chemicals could accumulate in the tissues of benthic invertebrates. Fish that prey on these invertebrates could ingest PAHs that have accumulated in tissues of prey organisms. Of the PAHs detected in soil at the site, a DEQ bioaccumulation SLV was available for only benzo(a)pyrene. Concentrations of benzo(a)pyrene exceeded the sediment bioaccumulation SLV of 100 micrograms per kilogram ($\mu\text{g}/\text{kg}$) at the following surface soil sample locations: SS-7, SS-12, SS-15, SS-16, SS-17, SS-18, SS-20, and SS-21 (see Table 4).

Two VOCs (acetone and trichlorofluoromethane) were detected in surface soil at the site (see Table 4). Acetone was reported in soil from SS-6 at a concentration of 66 $\mu\text{g}/\text{kg}$; and the concentration of trichlorofluoromethane in the sample from SS-9 was 10 $\mu\text{g}/\text{kg}$. The USEPA Region 9 industrial soil PRGs for acetone and trichlorofluoromethane are 6,000 mg/kg and 2,000 mg/kg, respectively (USEPA, 2002a). Because concentrations of both VOCs are several orders of magnitude below PRGs, it is inferred that VOCs in soil are unlikely to pose unacceptable risks to on-site workers.

Butyltins were detected in several surface soil samples (see Table 5). Butyltins are likely associated with fill material dredged from the Willamette River. The maximum detected concentration of TBT in surface soil was 120 $\mu\text{g}/\text{kg}$. The USEPA Region 9 industrial soil PRG for tributyltin oxide is 180 mg/kg (USEPA, 2002a). Because the maximum detected concentration of TBT is several orders of magnitude below the PRG, the chemical is not expected to pose unacceptable risks to on-site workers. Although no reliable PEC is available for TBT, the apparent baseline concentration of TBT in sediment of the Lower Willamette River is approximately 300 $\mu\text{g}/\text{kg}$ (USEPA, 1998). Also, the DEQ bioaccumulation SLV for TBT in sediment is 190 $\mu\text{g}/\text{kg}$ (DEQ, 2001). The maximum detected concentration of TBT in soil is below both of these values, and it is unlikely that TBT in soil can migrate to sediment of the Willamette River at concentrations that may pose unacceptable risks to aquatic biota.

Subsurface Soil

As with surface soil, USEPA Region 9 PRGs were available for 19 of the 23 chemicals evaluated in subsurface soil (see Table 6). Again, only arsenic was detected in subsurface soil at concentrations above the soil PRG (see Table 6). Concentrations of arsenic in subsurface soil appear to be consistent with naturally occurring arsenic levels in soil of the region. As a result, it is unlikely that concentrations of metals in subsurface soil could pose unacceptable risks to potential human receptors at the site.

The maximum detected concentration of diesel-range petroleum hydrocarbons in subsurface soil (490 mg/kg) is below relevant generic RBCs (see Table 7). Heavy-oil-range petroleum hydrocarbons were detected in subsurface soil from sample location SB-4 at a concentration of 1,100 mg/kg, and this concentration is above the Level 2 Soil Matrix Cleanup Level for diesel or other nongasoline petroleum hydrocarbon contamination of 500 mg/kg (see Table 7). As discussed previously, no generic RBCs are available for heavy-oil-range petroleum hydrocarbon mixtures.

A total of 12 PAHs were detected in subsurface soil at the site (see Table 7). DEQ RBCs were available for ten of these PAHs. Concentrations of all PAHs in subsurface soil were below relevant DEQ RBCs (see Table 7). As a result, PAHs in subsurface soil are unlikely to pose unacceptable risks to potential human receptors.

2-Chlorotoluene was detected in subsurface soil from sample location B-2 at a concentration of 266 µg/kg (see Table 7). The USEPA Region 9 industrial soil PRG for o-chlorotoluene (a synonym for 2-chlorotoluene) is 560 mg/kg (USEPA, 2002a). Because the detected concentration of 2-chlorotoluene is several orders of magnitude lower than the PRG, it is unlikely that VOCs in subsurface soil could pose unacceptable risks to on-site workers.

Butyltins were detected at relatively low levels in soil from sample location SB-5, but the concentration of TBT in this sample was below the MRL and below the soil PRG (see Table 8). No PRGs were available for the butyltins that were detected in the sample (USEPA, 2002a).

Groundwater

The six on-site groundwater monitoring wells were sampled on three occasions: April 2003, July 2003, and April 2004. Shallow groundwater elevations in western Oregon are typically highest near the end of the seasonal rainy period in the spring, and lowest in the fall, following the summer drought. Groundwater elevations at the site appear to be consistent with this general pattern (see Table 1), and it appears that at least one sampling event has been performed during general periods of seasonal high and low groundwater elevations.

Groundwater samples collected during the first monitoring event (April 2003) were analyzed for total metals, and samples from the second and third events (July 2003 and April 2004) were analyzed for dissolved metals. As mentioned previously, the receptors most likely to eventually contact site-related metals in groundwater would be benthic or aquatic organisms in sediment or surface water of the Willamette River. The primary route of exposure for aquatic organisms is gill uptake of dissolved

metals, and as a result, ambient water quality criteria have been established for the dissolved form of metals (USEPA, 2002b). Presumably it was recognized that dissolved metals concentrations in groundwater would be more appropriate for evaluating potential risks to aquatic biota, and this consideration led to the change in metals analyses after the first sampling event.

As shown in Table 9, twelve metals were detected in groundwater in either the total or dissolved phase. DEQ aquatic biota SLVs were available for all of these metals, and USEPA human health water quality criteria for consumption of aquatic organisms were available for six of the detected metals.

Concentrations of total arsenic in groundwater samples collected in April 2003 from monitoring wells MW-2, MW-3, MW-4, and MW-5 were above the USEPA water quality criterion for fish ingestion (see Table 9). It appears that a substantial portion of the arsenic detected in these groundwater samples was associated with particulates because subsequent concentrations of dissolved arsenic in these monitoring wells were much lower. Concentrations of dissolved arsenic in groundwater samples collected in April 2004 from monitoring wells MW-4 and MW-5 were above the water quality criterion for fish ingestion. However, the MRL was also above this water quality criterion (see Table 9).

It appears unlikely that significant site-related arsenic is leaching to shallow groundwater. As reported by GeoDesign in the Phase II ESA (GeoDesign, 2003), arsenic levels in groundwater at the site are consistent with naturally occurring groundwater concentrations at other locations in the region. Also, GeoDesign submitted the surface soil sample from SS-15 (the sample with the highest concentration of arsenic in soil at the site) for analysis of leachable arsenic using USEPA Method 1311/6000/7000 Series, and the result was a nondetection with a reporting limit of 0.1 mg/L.

Concentrations of total chromium, copper, lead, mercury, silver, and zinc in the groundwater sample collected from MW-4 in April 2003 were above relevant DEQ SLVs (see Table 9). Also, the concentration of total silver in the sample collected during the same monitoring event from MW-2 was above the DEQ SLV. Dissolved concentrations of each of these metals were below relevant DEQ SLVs in groundwater samples collected in July 2003 and April 2004 from all monitoring wells. However, it should be noted that the MRL for waterborne silver was above the DEQ SLV. It is most likely that concentrations of total metals exceeded DEQ SLVs due to particulates in the groundwater samples (GeoDesign, 2003). The dissolved form of these metals is bioavailable to aquatic biota and is the form most likely to migrate in groundwater to the Willamette River. With the exception of arsenic, concentrations of dissolved metals are below relevant screening values, and both aquatic biota and human consumers of fish near the site are unlikely to experience unacceptable risks if groundwater discharges to the river.

A total of eight PAHs were detected in groundwater samples collected at the site (see Table 10). DEQ aquatic SLVs were available for five PAHs, and human health water quality criteria for consumption of aquatic organisms were also available for five PAHs. No relevant screening value was available for benzo(ghi)perylene. The concentration of chrysene in the groundwater sample collected from MW-4 in April 2003 was above the water quality criterion for fish ingestion. As discussed above, total concentrations of several metals in this sample were also elevated, and it is possible that this particular sample had an unusual number of suspended particles. Chrysene was not detected in groundwater

samples from MW-4 in subsequent sampling events, and this PAH was not detected in samples from other on-site monitoring wells (see Table 10). However, the MRLs for chrysene were above the water quality criterion for fish ingestion (see Table 10). Given that chrysene was reported only in one sample from a single groundwater monitoring well, it appears unlikely that the nature and extent of chrysene impacts to groundwater are sufficient to cause unacceptable risks to people that may ingest fish caught in the Willamette River near the site. Waterborne chrysene concentrations at the point where aquatic biota may be exposed to the chemical are expected to be substantially reduced relative to concentrations in groundwater due to natural attenuation processes and mixing with ambient river water.

Surface Water

With the exception of barium, the concentrations of metals in the small surface water features at the site are below DEQ aquatic biota SLVs and human health water quality criteria for consumption of aquatic organisms (see Table 11). Barium occurs naturally in soil and water of the region, and it is possible that barium is present at natural levels in these surface water features. Although it is unlikely that the small surface water features at the site support significant natural aquatic communities, COIs in surface water are unlikely to cause adverse effects to aquatic organisms that may visit these features.

Risk Summary

COIs reported in environmental samples at concentrations above risk-based screening concentrations for potential exposure scenarios are as follows:

- Concentrations of arsenic in almost all surface and subsurface soil samples were above USEPA Region 9 industrial soil PRGs. It is unknown whether some of the arsenic in surface soil resulted from an on-site release. However, concentrations of arsenic in soil at the site are consistent with naturally occurring concentrations in soil at other locations in the region.
- The concentration of copper in surface soil from sample location SS-9 and the concentration of lead in soil from sample location SS-21 were above their respective sediment PECs.
- Heavy-oil-range TPH concentrations were above the Level 2 Soil Matrix Cleanup Level for diesel or other nongasoline petroleum hydrocarbon contamination in surface soil samples from SS-6 and SS-12, and in the subsurface soil sample from SB-4. No DEQ RBCs are available for heavy-oil-range TPH.
- Concentrations of benzo(a)pyrene in surface soil from sample locations SS-7, SS-12, SS-16, and SS-21 were above both the DEQ RBC for occupational workers and the DEQ sediment bioaccumulation SLV. Also, concentrations of benzo(a)pyrene exceeded the sediment bioaccumulation SLV at sample locations SS-15, SS-17, SS-18, and SS-20.
- Concentrations of dissolved arsenic in groundwater samples collected in April 2004 from monitoring wells MW-4 and MW-5 were above the water quality criterion for fish ingestion. Also, the concentration of chrysene in the groundwater sample collected from MW-4 in April

2003 was above the water quality criterion for fish ingestion. The concentrations of arsenic in groundwater are consistent with naturally-occurring groundwater concentrations at other locations in the region.

CONCLUSIONS

With a few possible exceptions, it appears that sufficient data have been collected at the site to characterize the nature and extent of contamination and to estimate risks associated with potential exposure to site-related chemicals. Based on these preliminary risk estimates, a soil management plan appears to be necessary to prevent workers from contacting chemicals in soil in some locations and a source control measure (e.g., cap and/or stormwater management system) appears to be necessary to prevent chemicals from migrating to sediment of the Willamette River. These preliminary risk estimates are based on conservative exposure assumptions that may not reflect actual exposure conditions at the site and consequently may overestimate the actual risk to potential human and ecological receptors. In several cases, additional data collection and analysis may improve risk estimates and potentially change risk management decisions for some locations.

Available evidence suggests that it is unlikely that site-related chemicals in groundwater could migrate to surface water or sediment of the Willamette River at concentrations that could pose unacceptable risks to aquatic biota or humans that catch and consume aquatic organisms near the site. No risk management actions are necessary for groundwater, and no further investigation of groundwater is necessary at this time.

Based on preliminary risk estimates, occupational workers could experience unacceptable risks if they were to have long-term exposure to benzo(a)pyrene in surface soil near the northeastern and central parts of the site. However, in reality, workers are unlikely to constrain exposure activities to just the locations with elevated concentrations of benzo(a)pyrene. The preliminary risk estimate could be improved if it were assumed that workers move over the entire site and the 90% upper confidence limit about the sitewide mean concentration of benzo(a)pyrene in soil is used as an exposure point concentration. Because not all of the original sample results were available when this Memorandum was prepared (i.e., reporting limits for soil samples collected in August 2000), a statistical estimate of the exposure point concentration was not performed.

The concentrations of benzo(a)pyrene in surface soil samples collected at various locations over most of the site are greater than the DEQ bioaccumulation SLV. Also, copper and lead have been detected above sediment PECs in surface soil. At other sites in the Portland Harbor, these types of risk screening results have been used to infer that contaminants in soil may migrate via stormwater runoff to the Willamette River at concentrations that may pose unacceptable risks to aquatic organisms. In fact, it is unknown whether chemicals in soil at the site are actually migrating to the river at levels that could pose unacceptable risks.

It is unknown whether arsenic releases have occurred at the site, but arsenic concentrations in soil are similar to naturally occurring concentrations in the region. Given that soil at the site comprises fill from

several different locations, it may take a considerable sampling effort to characterize naturally occurring arsenic concentrations and identify locations where arsenic may be elevated above natural levels.

The costs and benefits associated with implementing a program to manage contaminants in soil based on findings of the preliminary risk evaluation should be weighed against the costs and potential benefits of performing additional investigations aimed at better characterizing potential risks. The scope of work for any potential additional investigations would be developed in collaboration with the DEQ. It is possible that the costs of sampling and analysis to better evaluate whether contaminants in soil may migrate to sediment of the river could approach costs associated with implementing a source control measure. Because the benefits of additional investigations are uncertain, it may be more cost-effective to manage soil based on preliminary risk assessment findings, if additional assessment costs are high.

REFERENCES

- DEQ. 2001. Guidance for ecological risk assessment: level II screening. Oregon Department of Environmental Quality. December.
- DEQ. 2003. Risk-based decision making for the remediation of petroleum-contaminated sites. Oregon Department of Environmental Quality. September 22.
- GeoDesign. 2003. Phase II environmental site assessment, Marine Finance Corporation, 8444 NW St. Helens Road, Portland, Oregon. Prepared by GeoDesign, Inc. June 16.
- Ingersoll, C. G., D. D. MacDonald, N. Wang, J. L. Crane, L. J. Field, P. S. Haverland, N. E. Kemble, R. A. Lindskoog, C. Severn, and D. E. Smorong. 2000. Prediction of sediment toxicity using consensus-based freshwater sediment quality guidelines. EPA 905/R-00/007. June.
- Jacobs. 2000a. Preliminary assessment and expanded preliminary assessment work plan, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for the Oregon Department of Environmental Quality. July.
- Jacobs. 2000b. Expanded preliminary assessment data report, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for the Oregon Department of Environmental Quality. October.
- MacDonald, D., C. Ingersoll, and T. Berger. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Archives of Environmental Contaminant Toxicology 39:20-31.
- PBSE. 1993. Phase one environmental property assessment report for Riverside Park, Portland, Oregon. Prepared by PBS Environmental.
- USEPA. 1998. Portland Harbor sediment investigation report. U.S. Environmental Protection Agency, Region X, Office of Environmental Cleanup, Seattle, Washington. EPA 910/R-98-006.

USEPA. 2002a. Region 9 preliminary remediation goals. U.S. Environmental Protection Agency.
<http://www.epa.gov/region09/>. October 1.

USEPA. 2002b. National recommended water quality criteria: 2002. U.S. Environmental Protection
Agency, Office of Water, EPA-822-R-02-047. November.

TABLES

Table Notes

Advanced American Construction Properties

Portland, Oregon

Shaded cells indicate concentrations above screening criteria.

-- = not applicable.

AWQC, fish ingestion = U.S. Environmental Protection Agency, National Recommended Water Quality Criteria: 2002.

B = Element was positively identified and quantitated above the instrument reporting limit, but less than the required reporting limit.

Background = Clark County 90th Percentile Value from Washington Department of Ecology, October 1994.

DEQ = Oregon Department of Environmental Quality.

DEQ Level II SLVs, aquatic = Oregon Department of Environmental Quality Guidance for Ecological Risk Assessment, December 2001.

DEQ Level II SLVs Sediment—Bioaccumulation = Oregon Department of Environmental Quality Guidance for Ecological Risk Assessment, December 2001.

DEQ RBCss = soil ingestion, dermal contact, and inhalation risk-based concentration from Oregon Department of Environmental Quality Risk-Based

Decision Making, Appendix A, September 22, 2003.

mg/kg = milligrams per kilogram.

mg/L = milligrams per liter.

MSL = mean sea level.

µg/kg = micrograms per kilogram.

µg/L = micrograms per liter.

NA = not analyzed.

ND = not detected above laboratory reporting methods.

NV = no value is available.

PAHs = polycyclic aromatic hydrocarbons.

PEC = probable effects concentration.

PRG = preliminary remediation goal.

RBCs = risk-based concentrations.

USEPA = U.S. Environmental Protection Agency.

VOCs = volatile organic compounds.

*total metals were analyzed for the April 2003 sampling event; dissolved metals were analyzed for the July 2003 and April 2004 sampling events.

^a>Max: The RBC is greater than the maximum amount that would be present if all of the initial air space were filled with petroleum product.

^b>Csat: The soil RBC exceeds the limit of three-phase equilibrium partitioning. Soil concentrations exceeding Csat indicate that free product might be present.

^carsenic cancer endpoint.

^d"CAL-Modified PRG."

^etotal chromium (1:6 ratio Cr VI:Cr III).

^fmethyl mercury.

^gnickel-soluble salts.

^hTotal PAHs concentrations include reporting limits for non-detect analytes.

Table 1
Groundwater Elevation Data
Advanced American Construction Properties
Portland, Oregon

Well ID	Date	Top of Casing Elevation (feet above MSL)	Depth to Water (feet)	Groundwater Elevation (feet above MSL)
MW-1	05/08/03	22.93	6.95	15.98
	07/22/03		8.17	14.76
	04/01/04		6.90	16.03
MW-2	05/08/03	31.63	19.55	12.08
	07/22/03		22.95	8.68
	04/01/04		21.43	10.20
MW-3	05/08/03	31.96	20.05	11.91
	07/24/03		23.53	8.43
	04/01/04		22.37	9.59
MW-4	05/08/03	31.56	19.70	11.86
	07/24/03		23.85	7.71
	04/01/04		22.38	9.18
MW-5	05/08/03	31.85	19.95	11.90
	07/24/03		23.06	8.79
	04/01/04		21.96	9.89
MW-6	05/08/03	30.95	11.75	19.20
	07/22/03		14.45	16.50
	04/01/04		11.76	19.19

Table 2
Sample Summary
Advanced American Construction Properties
Portland, Oregon

Sample	Sample Type	Sample Date	Investigation	Consultant	Analyses		
					Metals	TPH	SVOCs
SS-1 through SS-11	Surface Soil	August 2000	XPA	Jacobs	x (23)	x	x
SS-12 through SS-21	Surface Soil	August and October 2003	Unknown	GeoDesign	x (13)	x	
B-1, B-2, & MW-1 through MW-6	Subsurface Soil	March 2003	Phase II ESA	GeoDesign	x (13)	x	
SB-1 through SB-5	Subsurface Soil	August 2000	XPA	Jacobs	x (23)	x	x
MW-1 through MW-6	Groundwater	April 2003	Phase II ESA	GeoDesign	x (13)		
MW-1 through MW-6	Groundwater	July 2003 & April 2004	Unknown	GeoDesign	x (13)		
SW-1 & SW-2	Surface water	August 2000	XPA	Jacobs	x (23)		x

Table 2
Sample Summary
Advanced American Construction Properties
Portland, Oregon

Sample	Analyses			Data Quality
	PAHs	VOCs	Butyltins	
SS-1 through SS-11		x	x	The quality of the data is unknown. Data verification was reportedly conducted by Jacobs; however, MFA has not received the Data Verification Report.
SS-12 through SS-21	x	x		Data quality is unknown. The data were received without an accompanying report.
B-1, B-2, & MW-1 through MW-6	x	x		GeoDesign reported that the data are acceptable for use.
SB-1 through SB-5		x	x	The quality of the data is unknown. Data verification was reportedly conducted by Jacobs; however, MFA has not received the Data Verification Report.
MW-1 through MW-6	x	x		GeoDesign reported that the data are acceptable for use.
MW-1 through MW-6	x	x		Data quality is unknown. The data were received without an accompanying report.
SW-1 & SW-2		x		The quality of the data is unknown. Data verification was reportedly conducted by Jacobs; however, MFA has not received the Data Verification Report.
(23) = 23 metals were analyzed. (13) = 13 Priority Pollutant metals were analyzed.				

Table 3
Metals in Surface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Iron mg/kg
SS-12	8/20/2003	NA	NA	3.77	NA	NA	NA	NA	NA	NA	NA	NA
SS-13	8/20/2003	NA	NA	1.10	NA	NA	NA	NA	NA	NA	NA	NA
SS-14	8/20/2003	NA	NA	4.07	NA	NA	NA	NA	NA	NA	NA	NA
SS-15	8/20/2003	NA	NA	13.4	NA	NA	NA	NA	NA	NA	NA	NA
SS-16	8/20/2003	NA	NA	7.06	NA	NA	NA	NA	NA	NA	NA	NA
SS-17	8/20/2003	NA	NA	2.57	NA	NA	NA	NA	NA	NA	NA	NA
SS-18	8/20/2003	NA	NA	2.77	NA	NA	NA	NA	NA	NA	NA	NA
SS-19	10/15/2003	NA	NA	4.08	NA	NA	NA	NA	NA	NA	NA	NA
SS-20	10/15/2003	NA	NA	3.63	NA	NA	NA	NA	NA	NA	NA	NA
SS-21	10/15/2003	NA	NA	12.3	NA	NA	NA	NA	NA	NA	NA	NA
SS-1	8/11/2000	8,690	6.1 B	3.3	99.7	0.3 B	0.1 U	5,100	15.4	10	26.4	24,300
SS-2	8/11/2000	9,090	8.1 B	7.3	115	0.3 B	0.1 B	5,160	29.7	14.8	45.5	39,100
SS-3	8/11/2000	11,000	5.7 B	3.8	131	0.4 B	0.1 U	4,890	13.4	11.6	28.8	35,800
SS-4	8/11/2000	13,400	7.6 B	5.0	129	0.3 B	0.1 U	5,710	43.5	11	42.1	33,800
SS-5	8/10/2000	8,640	4.23 U	4.1	72.8	0.2 B	0.1 U	6,030	81.3	8.1	52.6	25,800
SS-6	8/10/2000	11,000	7.6 B	8.9	131	0.3 B	0.1 U	4,580	17	9.7	46.0	30,300
SS-7	8/10/2000	NA	0.31	12.1	NA	0.23	0.16	NA	33.3	NA	24.2	NA
SS-8	8/10/2000	5,280	9.6 B	0.9 B	43.9	0.1 B	0.1 U	4,150	8.2	16.3	12.8	38,700
SS-9	8/10/2000	9,890	7.4 B	13.3	137	0.2 B	0.1 U	15,200	28.0	11.1	270	36,200
SS-10	8/10/2000	10,500	4.2 U	2.9	112	0.3 B	0.1 U	4,460	11.6	15.5	19.2	22,600
SS-11	8/10/2000	10,900	7.6 B	7.6	113	0.3 B	0.5 B	5,120	22.7	11.7	48.2	29,200
Median				4.1								
Mean				5.9								
Screening Criteria												
Background		52,300	NV	6	NV	2	1	NV	27	NV	34	36,100
EPA Region 9 PRGs (Industrial)		100,000	410	1.6	67,000	1,900	7.4 ^d	NV	450 ^a	1,900	41,000	100,000
Reliable Consensus-Based PEC		NV	NV	33	NV	NV	5	NV	111	NV	149	NV

Table 3
Metals in Surface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Mercury mg/kg	Nickel mg/kg	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
SS-12	8/20/2003	42.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-13	8/20/2003	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-14	8/20/2003	21.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-15	8/20/2003	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-16	8/20/2003	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-17	8/20/2003	21.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-18	8/20/2003	34.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-19	10/15/2003	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-20	10/15/2003	26.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-21	10/15/2003	136	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-1	8/11/2000	31.3	3,730	459	0.03	12.3	677	0.5 U	0.8 U	268	0.2 U	70.6	76.6
SS-2	8/11/2000	90.7	2,580	621	0.03	17.8	576	1.0 B	0.8 U	263	0.2 U	96.7	194
SS-3	8/11/2000	47.9	3,220	547	0.03	14.6	880	0.5 U	0.8 U	320	0.2 U	92.0	98.5
SS-4	8/11/2000	51.7	6,650	507	0.04	27.5	805	0.5 U	0.8 U	583	0.2 U	79.6	184
SS-5	8/10/2000	35.1	2,880	708	0.03	31.6	621	0.5 U	0.8 U	377	0.2 U	63.6	82.3
SS-6	8/10/2000	37.8	3,280	425	0.02	15	781	0.5 U	0.8 U	376	0.2 U	82.7	172
SS-7	8/10/2000	21.2	NA	NA	0.02 B	18.5	NA	1.0 U	0.0	NA	0.07	NA	81.5
SS-8	8/10/2000	11.3 B	1,470	470	0.01 U	7.7	545	0.5 U	0.8 U	282	0.2 U	134	60.6
SS-9	8/10/2000	56	3,810	543	0.04	16.9	856	0.5 U	0.8 U	456	0.2 U	68	458
SS-10	8/10/2000	15.5	3,560	481	0.03	13.8	563	0.9 B	0.8 U	316	0.2 U	80.4	66
SS-11	8/10/2000	70.5	3,080	430	0.09	31.8	716	0.5 U	0.8 U	506	0.2 U	91.9	219
Median													
Mean													
Screening Criteria													
Background		17	NV	1,500	0	21	NV	NV	NV	NV	NV	NV	96
EPA Region 9 PRGs (Industrial)		750	NV	19,000	62 ^f	20,000 ^g	NV	5,100	5,100	NV	67	7,200	100,000
Reliable Consensus-Based PEC		128	NV	NV	NV	49	NV	NV	NV	NV	NV	NV	459

Table 4
TPH, PAHs, and VOCs in Surface Soil (0–0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Total Petroleum Hydrocarbons by NWTPH-Dx		PAHs by EPA Method 8270-SIM					
		Diesel-Range mg/kg	Heavy Oil-Range mg/kg	Acenaphthene ug/kg	2-Methyl- naphthalene ug/kg	Acenaphthylene ug/kg	Anthracene ug/kg	Benzo(a)- anthracene ug/kg	
SS-12	08/20/03	500 U	1,170	268 U	ND	268 U	268 U	268 U	
SS-13	08/20/03	25 U	50 U	13.4 U	ND	13.4 U	13.4 U	13.4 U	
SS-14	08/20/03	51	66.4	26.8 U	ND	26.8 U	26.8 U	46.3	
SS-15	08/20/03	25 U	50 U	64.3	ND	26.8 U	26.8	147	
SS-16	08/20/03	34	164	70.9	ND	36	35.6	223	
SS-17	08/20/03	25 U	50 U	57.4	ND	13.4 U	20.8	171	
SS-18	08/20/03	25 U	50 U	42	ND	26.8 U	26.8 U	97.4	
SS-19	10/15/03	25 U	50 U	35.1	ND	13.4 U	13.4 U	19.9	
SS-20	10/15/03	25 U	50 U	23.7	ND	13.4 U	17.2	102	
SS-21	10/15/03	32.3	142	48.3	ND	44.5	76.2	516	
SS-1	8/11/2000	35	98 U	ND	ND	ND	ND	ND	
SS-2	8/11/2000	84	250	ND	ND	ND	ND	0.65	
SS-3	8/10/2000	230	260	ND	ND	ND	ND	ND	
SS-4	8/10/2000	220	110	NA	NA	NA	NA	NA	
SS-5	8/10/2000	28	110	ND	ND	ND	ND	ND	
SS-6	08/10/00	1,400	9,800	ND	ND	ND	ND	ND	
SS-7	08/09/00	62	380	110	3 J	3 J	100 J	620	
SS-8	8/10/2000	26 U	100 U	ND	ND	ND	ND	ND	
SS-9	08/10/00	NA	NA	ND	ND	ND	ND	0.59	
SS-10	8/10/2000	NA	NA	ND	ND	ND	ND	ND	
SS-11	08/10/00	NA	NA	ND	ND	ND	ND	ND	
Screening Criteria									
DEQ RBCss—Occupational		70,000	NV	41,000,000 ^b	NV	NV	--- ^a	2,700	
DEQ RBCss—Construction Worker		23,000	NV	16,000,000 ^b	NV	NV	90,000,000 ^b	21,000 ^b	
DEQ RBCss—Excavation Worker		--- ^a	NV	--- ^a	NV	NV	--- ^a	590,000 ^b	
EPA Region 9 PRGs (Industrial)									
Reliable Consensus-Based PEC		NV	NV	NV	NV	NV	NV	1,050	
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	NV	NV	NV	NV	

Table 4
TPH, PAHs, and VOCs in Surface Soil (0–0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM					
		Benzo(a)-pyrene ug/kg	Benzo(b)-fluoranthene ug/kg	Benzo(ghi)-perylene ug/kg	Benzo(k)-fluoranthene ug/kg	Chrysene ug/kg	Dibenz(a,h)-anthracene ug/kg
SS-12	08/20/03	330	303	381	277	281	268
SS-13	08/20/03	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	66.3	81.1	103	40.1	65.9	26.8 U
SS-15	08/20/03	171	181	146	147	190	45.6
SS-16	08/20/03	361	297	472	253	274	79
SS-17	08/20/03	244	254	219	192	201	56.2
SS-18	08/20/03	129	165	131	96.3	124	31.9
SS-19	10/15/03	18.6	17	13.4 U	18.3	22.1	13.4 U
SS-20	10/15/03	141	120	124	130	153	25.5
SS-21	10/15/03	692	541	583	541	631	117
SS-1	8/11/2000	ND	ND	ND	ND	ND	ND
SS-2	8/11/2000	0.91	0.87	0.78	0.79	0.89	ND
SS-3	8/10/2000	ND	ND	ND	ND	ND	ND
SS-4	8/10/2000	NA	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	ND	ND	ND
SS-6	08/10/00	ND	ND	ND	ND	ND	ND
SS-7	08/09/00	470	520	290	220	ND	66
SS-8	8/10/2000	ND	ND	ND	ND	ND	ND
SS-9	08/10/00	0.79	1.10	0.54	0.92	0.83	ND
SS-10	8/10/2000	ND	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.34	ND	ND	0.35	ND
Screening Criteria							
DEQ RBCss—Occupational		270	2,700	NV	27,000 ^b	270,000 ^b	270
DEQ RBCss—Construction Worker		2,100	21,000 ^b	NV	210,000 ^b	2,100,000 ^b	2,100
DEQ RBCss—Excavation Worker		59,000 ^b	590,000 ^b	NV	5,900,000 ^b	59,000,000 ^b	59,000 ^b
EPA Region 9 PRGs (Industrial)							
Reliable Consensus-Based PEC		1,450	NV	NV	NV	1,290	NV
DEQ Level II SLV Sediment							
—Bioaccumulation		100	NV	NV	NV	NV	NV

Table 4
TPH, PAHs, and VOCs in Surface Soil (0–0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM				
		Dimethyl-naphthalene ug/kg	Fluoranthene ug/kg	Fluorene ug/kg	Indeno(1,2,3-cd)-pyrene ug/kg	Naphthalene ug/kg
SS-12	08/20/03	ND	337	268	282	268
SS-13	08/20/03	ND	13.4 U	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	ND	89.4	26.8 U	70.3	26.8 U
SS-15	08/20/03	ND	323	57.5	127	63.3
SS-16	08/20/03	ND	369	51	337	26.8 U
SS-17	08/20/03	ND	271	39	181	13.4 U
SS-18	08/20/03	ND	165	30.4	108	26.8 U
SS-19	10/15/03	ND	48.4	34.4	13.4 U	13.4 U
SS-20	10/15/03	ND	156	14.3	102	13.4 U
SS-21	10/15/03	ND	957	47.7	466	33.5 U
SS-1	8/11/2000	ND	ND	ND	ND	ND
SS-2	8/11/2000	ND	1.4	ND	0.68	ND
SS-3	8/10/2000	ND	ND	ND	ND	ND
SS-4	8/10/2000	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	ND	ND
SS-6	08/10/00	ND	ND	ND	ND	ND
SS-7	08/09/00	0.70 J	840 J	44	390	3 J
SS-8	8/10/2000	ND	0.44	ND	ND	ND
SS-9	08/10/00	ND	1.30	ND	0.64	ND
SS-10	8/10/2000	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.59	ND	ND	ND
Screening Criteria						
DEQ RBCss—Occupational		NV	29,000,000 ^b	35,000,000 ^b	2,700	770,000 ^b
DEQ RBCss—Construction Worker		NV	8,900,000 ^b	12,000,000 ^b	21,000 ^b	710,000 ^b
DEQ RBCss—Excavation Worker		NV	— ^a	— ^a	590,000 ^b	20,000,000 ^b
EPA Region 9 PRGs (Industrial)						
Reliable Consensus-Based PEC		NV	NV	NV	NV	561
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	NV	NV

Table 4
TPH, PAHs, and VOCs in Surface Soil (0–0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM			VOCs by EPA Method 8260B	
		Phenanthrene ug/kg	Pyrene ug/kg	Total PAHs ^h ug/kg	Acetone ug/kg	Trichloro- fluoromethane ug/kg
SS-12	08/20/03	268	391	4,726	NA	NA
SS-13	08/20/03	13.4 U	13.4 U	214.4 U	NA	NA
SS-14	08/20/03	56.6	94.8	874.6	NA	NA
SS-15	08/20/03	250	323	2,289.3	NA	NA
SS-16	08/20/03	132	497	3,514.3	NA	NA
SS-17	08/20/03	134	295	2,362.2	NA	NA
SS-18	08/20/03	84.6	177	1,462	NA	NA
SS-19	10/15/03	29.5	43.7	367.5	NA	NA
SS-20	10/15/03	60.2	172	1,367.7	NA	NA
SS-21	10/15/03	476	1,180	6,950.2	NA	NA
SS-1	8/11/2000	ND	ND	ND	ND	ND
SS-2	8/11/2000	0.67	ND	7.64	ND	ND
SS-3	8/10/2000	ND	ND	ND	NA	NA
SS-4	8/10/2000	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	NA	NA
SS-6	08/10/00	ND	0.65	0.65	66	ND
SS-7	08/09/00	490 J	830 J	4,999	ND	ND
SS-8	8/10/2000	ND	ND	0.44	ND	ND
SS-9	08/10/00	0.52	0.9	8.13	ND	10
SS-10	8/10/2000	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.47	1.75	NA	NA
Screening Criteria						
DEQ RBCss—Occupational		NV	21,000,000 ^b	NV	NV	NV
DEQ RBCss—Construction Worker		NV	6,700,000 ^b	NV	NV	NV
DEQ RBCss—Excavation Worker		NV	— ^a	NV	NV	NV
EPA Region 9 PRGs (Industrial)					6,000,000	2,000,000
Reliable Consensus-Based PEC		1,170	1,520	22,280	NV	NV
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	290	NV

Table 5
Butyltins in Surface Soil (0–0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Tetra-n-butyltin ug/kg		Tri-n-butyltin Cation ug/kg		Di-n-butyltin Cation ug/kg		n-butyltin Cation ug/kg	
SS-1	8/11/2004	3	U	8		2		3	
SS-2	8/11/2004	3	U	120		15		12	
SS-7	8/9/2004	3	U	0.5	J	0.4	J	1	U
SS-9	8/10/2004	3	U	110		29		27	
SS-10	8/11/2004	3	U	2		0.5	J	1	U
Screening Criteria									
EPA Region 9 PRGs (Industrial)		NV		180,000		NV		NV	
Portland Harbor Apparent Baseline Concentration		NV		300		NV		NV	
DEQ Level II SLV Sediment —Bioaccumulation		NV		190		NV		NV	

Table 6
Metals in Subsurface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg
B-1 (8-10)	03/24/03	8-10	NA	0.5 U	2.42	NA	0.38	0.37 U	NA	13.2
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	8.99	2.27	NA	0.38	5.39	NA	16.4
MW-1 (8-9)	03/21/03	8-9	NA	0.5 U	1.66	NA	0.74	1.95 U	NA	22.9
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	0.31 U	2.31	NA	0.43 U	0.43 U	NA	14.2
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	0.33 U	2.91	NA	0.4 U	0.4 U	NA	13.2
MW-4 (18-19)	03/21/03	18-19	NA	0.35 U	2.67	NA	0.3	0.29 U	NA	11.3
MW-5 (22-23)	03/21/03	22-23	NA	0.4 U	1.76	NA	0.39 U	0.39 U	NA	19.2
MW-6 (13-15)	03/21/03	13-15	NA	0.33 U	1.97	NA	0.41 U	0.41 U	NA	15.9
SB-1	8/11/2000	6-8	12,500	4.2 U	3.1	111	0.3 B	0.1 U	4,420	15.6
SB-2	8/11/2000	14-16	9,470	4.39 U	3.2	74.6	0.3 B	0.1 U	3,890	11.7
SB-5	8/11/2000	18-19	10,300	4.58 U	3.3	86.6	0.3 B	0.1 U	4,100	13.6
Screening Criteria										
Background			52,300	NV	6	NV	2	1	NV	27
EPA Region 9 PRGs (Industrial)			100,000	410	1.6 ^c	67,000	1,900	7.4 ^d	NV	450 ^e

Table 6
Metals in Subsurface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	Cobalt mg/kg	Copper mg/kg	Iron mg/kg	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Mercury mg/kg	Nickel mg/kg
B-1 (8-10)	03/24/03	8-10	NA	15.9	NA	4.73	NA	NA	0.1 U	17.9
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	17.1	NA	5.82	NA	NA	0.09 U	18.5
MW-1 (8-9)	03/21/03	8-9	NA	18.3	NA	10.5	NA	NA	0.1 U	13.6
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	35.7	NA	4.04	NA	NA	0.09 U	16.9
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	16.8	NA	2.24	NA	NA	0.09 U	17
MW-4 (18-19)	03/21/03	18-19	NA	17.5	NA	7.78	NA	NA	0.18	15.7
MW-5 (22-23)	03/21/03	22-23	NA	20	NA	5.92	NA	NA	0.1 U	23.4
MW-6 (13-15)	03/21/03	13-15	NA	18.6	NA	11.1	NA	NA	0.09 U	21.3
SB-1	8/11/2000	6-8	13.4	15.7	24,200	12.7 B	4,370	316	0.11	20
SB-2	8/11/2000	14-16	12.8	13.1	22,100	3 B	3,500	273	0.01 U	16.4
SB-5	8/11/2000	18-19	12.6	20.1	22,900	19 B	3,460	386	0.1	17.1
Screening Criteria										
Background			NV	34	36,100	17	NV	1,500	0.04	21
EPA Region 9 PRGs (Industrial)			1,900	41,000	100,000	750	NV	19,000	62 ^f	20,000 ^g

Table 6
Metals in Subsurface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
B-1 (8-10)	03/24/03	8-10	NA	0.37 U	0.50 U	NA	0.5 U	NA	62.8
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	0.31 U	0.36 U	NA	0.36 U	NA	92.4
MW-1 (8-9)	03/21/03	8-9	NA	0.32 U	0.50 U	NA	0.5 U	NA	55.8
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	0.43 U	0.31 U	NA	0.31 U	NA	63.6
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	0.4 U	0.33 U	NA	0.33 U	NA	51
MW-4 (18-19)	03/21/03	18-19	NA	0.29 U	0.35 U	NA	0.35 U	NA	52.8
MW-5 (22-23)	03/21/03	22-23	NA	0.39 U	0.40 U	NA	0.4 U	NA	58.2
MW-6 (13-15)	03/21/03	13-15	NA	0.41 U	0.33 U	NA	0.33 U	NA	52.8
SB-1	8/11/2000	6-8	522	1.1 B	0.8 U	437	0.2 U	65.2	56.5
SB-2	8/11/2000	14-16	521	0.2 U	0.9 U	293	0.2 U	56.5	46.5
SB-5	8/11/2000	18-19	565	1.2 B	0.9 U	304	0.20 U	60.4	80.1
Screening Criteria									
Background			NV	NV	NV	NV	NV	NV	96
EPA Region 9 PRGs (Industrial)			NV	5,100	5,100	NV	67	7,200	100,000

Table 7
TPH, PAHs, and VOCs in Subsurface Samples
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	NWTPH-Dx Method		PAHs by USEPA Method 8270SIM					
			Diesel-Range Hydrocarbons mg/kg	Heavy-Oil-Range Hydrocarbons mg/kg	Acenaphthene ug/kg	Benzo(a)-anthracene ug/kg	Benzo(a)-pyrene ug/kg	Benzo(b)-fluoranthene ug/kg	Benzo(ghi)-perylene ug/kg	
B-1	03/26/03	8-10	25 U	50 U	45.3	104	114	72.8	91.6	
B-1	03/26/03	17-18	25 U	50 U	40.2 U	20.4	17.1	18.5	18.6	
B-2	03/24/03	7-9	25 U	50 U	26.8 U	111	138	82.6	117	
MW-1	03/21/03	8-9	25 U	57.6	13.4 U	24.8	29.5	21.9	26.2	
MW-1	03/21/03	14-15	25 U	50 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-2	03/21/03	18-20	25 U	50 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-2	03/21/03	23-25	25 U	50 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-3	03/21/03	19-20	NA	NA	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-4	03/21/03	18-19	31	66.1	15.9	43.4	59.7	35.5	62.6	
MW-5	03/21/03	22-23	NA	NA	13.4 U	35.4	57.9	32.4	57.9	
MW-6	03/21/03	13-15	NA	NA	26.8 U	70.2	124	85.2	149	
SB-1	8/11/2000	6-8	26 U	110 U	ND	ND	ND	ND	ND	
SB-2	8/11/2000	14-16	27	100 U	ND	ND	ND	ND	ND	
SB-3	8/10/2000	18-20	27 U	110 U	ND	ND	ND	ND	ND	
SB-4	8/10/2000	20-21	490	1,100	ND	ND	ND	ND	ND	
SB-5	8/11/2000	18-19	91	260	ND	ND	ND	ND	ND	
Screening Criteria										
DEQ RBCss—Construction Worker			23,000	NV	16,000,000 ^b	21,000 ^b	2,100	21,000 ^b	NV	
DEQ RBCss—Excavation Worker			-- ^a	NV	-- ^a	590,000 ^b	59,000 ^b	590,000 ^b	NV	
EPA Region 9 PRGs (Industrial)										

Table 7
TPH, PAHs, and VOCs in Subsurface Samples
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	PAHs by USEPA Method 8270SIM								VOCs by USEPA Method 8260B
			Benzo(k)-fluoranthene ug/kg	Chrysene ug/kg	Fluoranthene ug/kg	Fluorene ug/kg	Indeno(1,2,3-cd)-pyrene ug/kg	Phenanthrene ug/kg	Pyrene ug/kg	2-Chlorotoluene ug/kg	
B-1	03/26/03	8-10	71.2	139	310	26.8 U	66.9	144	327	NA	
B-1	03/26/03	17-18	13.4 U	24.6	76	14.2	13.4 U	83	72.8	NA	
B-2	03/24/03	7-9	89.9	139	254	26.8 U	82.3	26.8 U	293	266	
MW-1	03/21/03	8-9	18.8	32.5	49.2	13.4 U	19.2	42.8	61.6	NA	
MW-1	03/21/03	14-15	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	NA	
MW-2	03/21/03	18-20	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	100	U
MW-2	03/21/03	23-25	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	NA	
MW-3	03/21/03	19-20	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	NA	
MW-4	03/21/03	18-19	41.5	55.6	51.5	14.3	43.2	27	102	NA	
MW-5	03/21/03	22-23	34.8	47.3	88.8	13.4 U	38.8	38.6	137	NA	
MW-6	03/21/03	13-15	71.4	98.5	137	26.8 U	100	60.7	169	100	U
SB-1	8/11/2000	6-8	ND	ND	ND	ND	ND	ND	0.36	NA	
SB-2	8/11/2000	14-16	ND	ND	ND	ND	ND	ND	ND	NA	
SB-3	8/10/2000	18-20	ND	ND	ND	ND	ND	ND	ND	NA	
SB-4	8/10/2000	20-21	ND	ND	ND	ND	ND	ND	ND	NA	
SB-5	8/11/2000	18-19	ND	ND	ND	ND	ND	ND	ND	NA	
Screening Criteria											
DEQ RBCss—Construction Worker			210,000 ^b	2,100,000 ^b	8,900,000 ^b	12,000,000 ^b	21,000 ^b	NV	6,700,000 ^b	NV	
DEQ RBCss—Excavation Worker			5,900,000 ^b	59,000,000 ^b	-- ^a	-- ^a	590,000 ^b	NV	-- ^a	NV	
EPA Region 9 PRGs (Industrial)										560,000	

Table 8
Butyltins in Subsurface Samples
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	Tetra-n-butyltin ug/kg	Tri-n-butyltin Cation ug/kg	Di-n-butyltin Cation ug/kg	n-butyltin Cation ug/kg
SB-5	8/11/2000	18-19	3 U	1 U	8	2
Screening Levels						
DEQ RBCss—Construction Worker			NV	NV	NV	NV
DEQ RBCss—Excavation Worker			NV	NV	NV	NV
PRG—Industrial			NV	180,000	NV	NV

Table 9
Total/Dissolved Metals* in Groundwater
Advanced American Construction Properties
Portland, Oregon

Sample Location	Sample Date	Antimony mg/L	Arsenic mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L
MW-1	04/15/03	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/22/03	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-2	04/15/03	0.001 U	0.00139	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/22/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-3	04/15/03	0.001 U	0.0012	0.001 U	0.001 U	0.00183	0.00218	0.00117
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00105	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-4	04/15/03	0.00101	0.0195	0.00357	0.00202	0.182	0.43500	0.692
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00123	0.00200 U	0.001 U
	04/01/04	0.001 U	0.0051	0.001 U	0.001 U	0.001 U	0.00200 U	0.001 U
MW-5	04/15/03	0.001 U	0.00286	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00114	0.002 U	0.001 U
	04/01/04	0.001 U	0.00159	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-6	04/15/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00227	0.00173
	07/22/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.002 U	0.001 U
Screening Criteria								
DEQ Level II SLVs, aquatic		1.6	0.15	0.0053	0.0022	0.011 (IV)/ 0.074 (III)	0.009	0.0025
AWQC, fish ingestion		0.64	0.00014	NV	NV	NV	NV	NV

Table 9
Total/Dissolved Metals* in Groundwater
Advanced American Construction Properties
Portland, Oregon

Sample Location	Sample Date	Mercury mg/L	Nickel mg/L	Selenium mg/L	Silver mg/L	Thallium mg/L	Zinc mg/L
MW-1	04/15/03	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
	07/22/03	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-2	04/15/03	0.0002 U	0.002 U	0.001 U	0.00138	0.001 U	0.005 U
	07/22/03	0.0002 U	0.002 U	0.00123	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-3	04/15/03	0.0002 U	0.00413	0.001 U	0.001 U	0.001 U	0.00774
	07/24/03	0.0002 U	0.002 U	0.00171	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.00821
MW-4	04/15/03	0.000973	0.139	0.00103	0.01490	0.001 U	0.63500
	07/24/03	0.000200 U	0.002 U	0.00329	0.00100 U	0.001 U	0.00500 U
	04/01/04	0.000200 U	0.002 U	0.00161	0.00100 U	0.001 U	0.00500 U
MW-5	04/15/03	0.0002 U	0.002 U	0.00119	0.001 U	0.001 U	0.005 U
	07/24/03	0.0002 U	0.002 U	0.00168	0.001 U	0.001 U	0.00758
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-6	04/15/03	0.0002 U	0.00303	0.001 U	0.001 U	0.001 U	0.005 U
	07/22/03	0.0002 U	0.0031	0.00105	0.001 U	0.001 U	0.00683
	04/01/04	0.0002 U	0.00399	0.001 U	0.001 U	0.001 U	0.005 U
Screening Criteria							
DEQ Level II SLVs, aquatic		0.00077 (elemental, total)	0.052	0.005	0.00012	0.04	0.12
AWQC, fish ingestion		0.0003 (methyl)	4.6	4.2	NV	0.00047	26

Table 10
Summary of Groundwater Analytical Data—PAHs
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Acenaphthene ug/L	Benzo (ghi) perylene ug/L	Chrysene ug/L	Fluoranthene ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L	Others ug/L
MW-1	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
MW-2	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
MW-3	04/15/03	0.490	0.1 U	0.1 U	0.795	0.1 U	0.1 U	0.117	1.11	ND
	07/24/03	1.060	0.1 U	0.1 U	1.02	0.157	0.1 U	1.400	1.48	ND
	04/01/04	0.136	0.1 U	0.1 U	0.188	0.1 U	0.1 U	0.100 U	0.293	ND
MW-4	04/15/03	0.808	0.100	0.113	0.168	0.1 U	0.135	0.134	0.649	ND
	07/24/03	1.14	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.274	ND
	04/01/04	0.675	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.178	ND
MW-5	04/15/03	0.196	0.1 U	0.1 U	0.134	0.1 U	0.1 U	0.277	0.666	ND
	07/24/03	0.725	0.1 U	0.1 U	0.269	0.1 U	0.1 U	0.693	1.03	ND
	04/01/04	0.189	0.1 U	0.1 U	0.142	0.1 U	0.1 U	0.109	0.751	ND
MW-6	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.402	0.1 U	0.1 U	0.103	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
Screening Criteria										
Level II, Aquatic		520	NV	NV	6.16	3.9	620	6.3	NV	NV
AWQC, fish ingestion		990	NV	0.018	140	5,300	NV	NV	4,000	NV

Table 11
Metals in Surface Water
Advanced American Construction Properties
Portland, Oregon

Sample Location	Aluminum ug/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Calcium ug/L	Chromium ug/L
SW-1	42.2 B	ND	ND	19.4	ND	ND	14,700	ND
SW-2	ND	ND	ND	5.2	ND	ND	14,700	ND
Screening Criteria								
DEQ Level II SLVs, aquatic	87	1,600	150	4	5.3	2.2	116,000	11 (IV)/ 74 (III)
AWQC, fish ingestion	NV	640	0.14	NV	NV	NV	NV	NV

Table 11
Metals in Surface Water
Advanced American Construction Properties
Portland, Oregon

Sample Location	Cobalt ug/L	Copper ug/L	Iron ug/L	Lead ug/L	Magnesium ug/L	Manganese ug/L	Mercury ug/L	Nickel ug/L
SW-1	ND	ND	97.5	ND	4,640	16	ND	ND
SW-2	ND	ND	20.9	ND	4,640	4.3 B	ND	ND
Screening Criteria								
DEQ Level II SLVs, aquatic	23	9	1,000	2.5	82,000	120	0.77 (elemental, total)	52
AWQC, fish ingestion	NV	NV	NV	NV	NV	NV	0.3 (methyl)	4,600

Table 11
Metals in Surface Water
Advanced American Construction Properties
Portland, Oregon

Sample Location	Potassium ug/L	Selenium ug/L	Silver ug/L	Sodium ug/L	Thallium ug/L	Vanadium ug/L	Zinc
SW-1	ND	ND	ND	7,450	ND	4.9 B	4.4 B
SW-2	ND	ND	ND	5,720	ND	ND	ND
Screening Criteria							
DEQ Level II SLVs, aquatic	53,000	5	0.12	680,000	40	20	120
AWQC, fish ingestion	NV	4,200	NV	NV	6,300	NV	26,000

FIGURES



BASE MAP PREPARED FROM DELORME 3-D TOPOQUADS (1999).

SITE ADDRESS: 8444 NW ST. HELENS ROAD, PORTLAND, OREGON
NE1/4 SE 1/4 OF S11, T1N, R1W

0 2000 4000
SCALE IN FEET

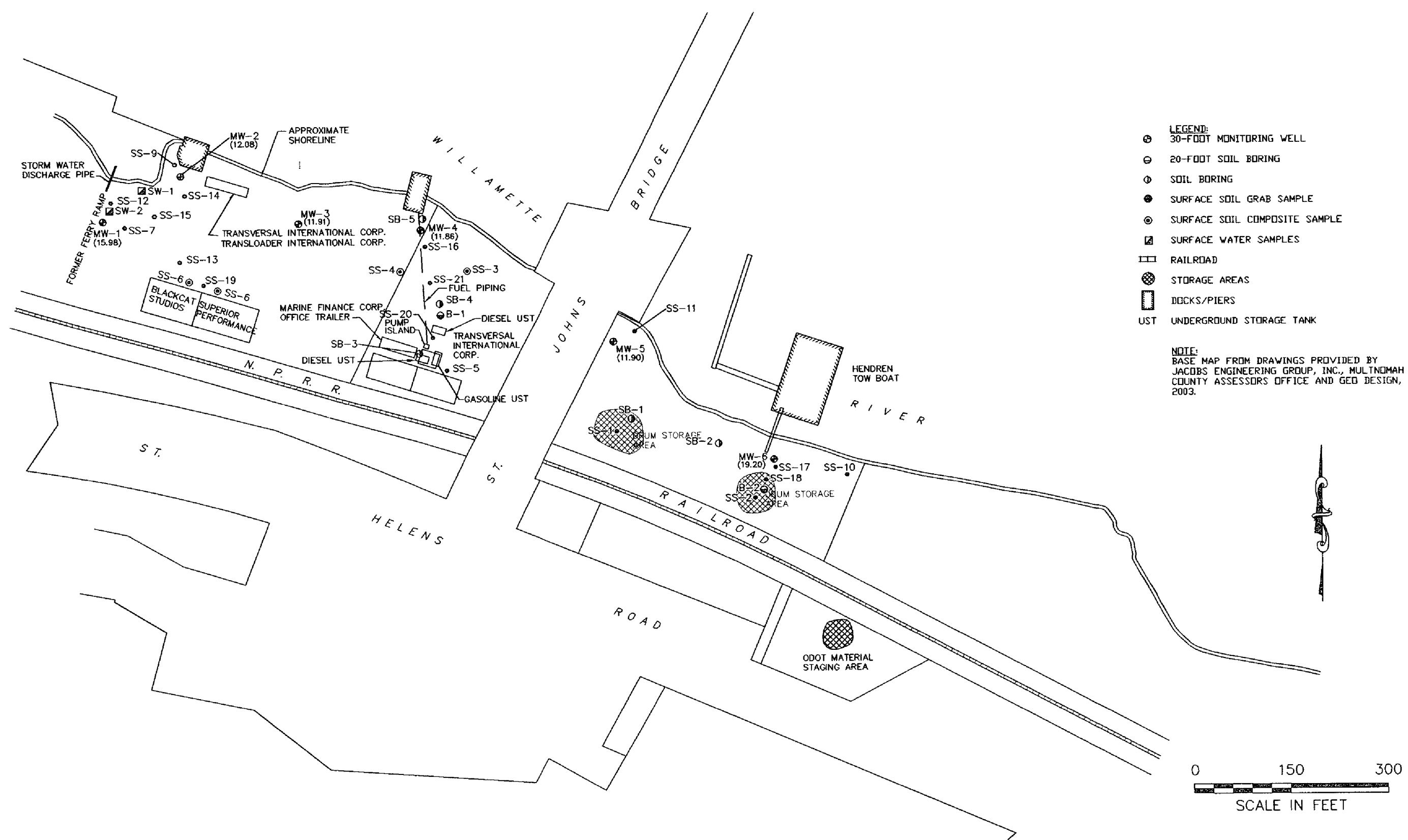
Vancouver:
(360) 694-2691
Portland:
(971) 544-2139

**MAUL
FOSTER
ALONGI INC.**

DATE 08/09/04
DWN. DLG
APPR. KSS
REVIS.
PROJECT NO.
0100.01.01

Figure 1
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
LINNTON, OREGON
SITE LOCATION

File: G:\0000\0100.01_ADVANCED AMER DRIVING\01 SITE MAP.DWG Last edited: AUG. 12, 2004 @ 4:12 p.m. by: dglous Xrefs: site base, sample base, black/white

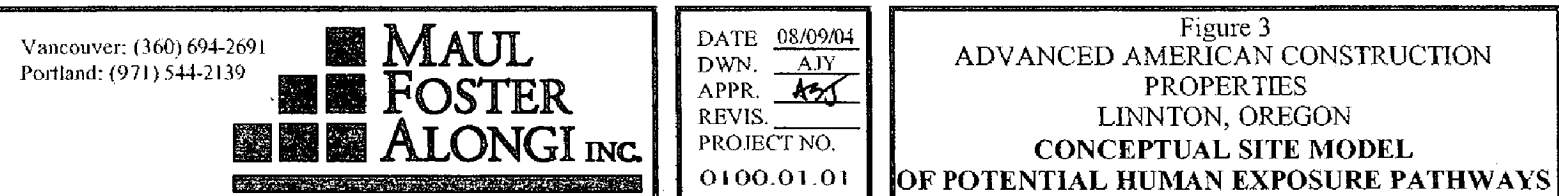


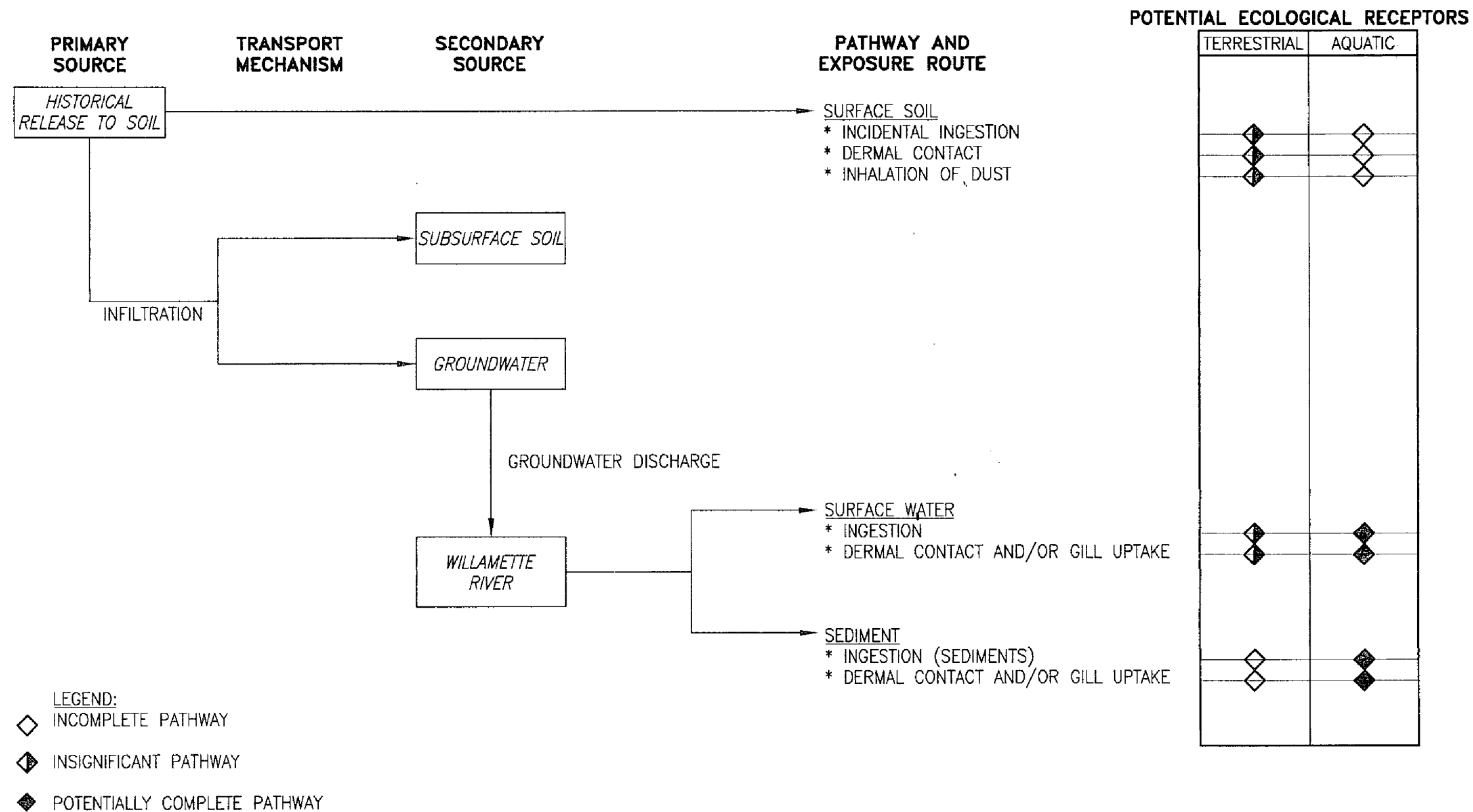
Vancouver: (360) 694-2691
Portland: (971) 544-2139

**MAUL
FOSTER
ALONGI INC.**

DATE 08/09/04
DWN. DLG
APPR. *ASJ*
REVIS.
PROJECT NO.
0100.01.01

Figure 2
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
LINNTON, OREGON
FORMER SITE FEATURES AND
SAMPLE LOCATIONS





Vancouver: (360) 694-2691
Portland: (971) 544-2139



DATE 08/09/04
DWN. AJY
APPR. *AJY*
REVIS. _____
PROJECT NO.
0100.01.01

Figure 4
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
LINNTON, OREGON
CONCEPTUAL SITE MODEL OF
POTENTIAL ECOLOGICAL EXPOSURE PATHWAYS









**SOURCE CONTROL EVALUATION AND PLAN
MARINE FINANCE CORPORATION PROPERTY
8444 N.W. ST. HELENS ROAD
PORTLAND, OREGON**

Prepared for
Advanced American Construction Properties, LLC
October 20, 2004

Prepared by
Maul Foster & Alongi, Inc.
3121 SW Moody Avenue, Suite 200
Portland, Oregon 97239

Project 0100.01.01

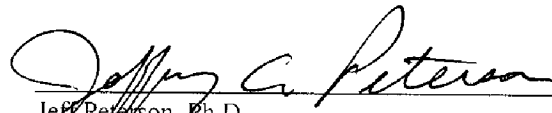
**Source Control Evaluation and Plan
Marine Finance Corporation Property
8444 N.W. St. Helens Road
Portland, Oregon**

The material and data in this report were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.



Anna St. John, R.G.
Project Manager


Jeff Peterson, Ph.D.
Supervising Environmental Scientist

CONTENTS

TABLES AND ILLUSTRATIONS	ix
ACRONYMS AND ABBREVIATIONS	xi
1 INTRODUCTION	1-1
1.1 Regulatory Framework for Source Control Evaluation	1-2
1.2 Purposes of the Source Control Evaluation and Source Control Plan	1-2
2 SITE BACKGROUND	2-1
2.1 Site Description	2-1
2.2 Site History	2-2
2.3 Previous Investigations	2-3
2.4 Geology and Hydrogeology	2-5
2.5 Beneficial Uses of Land and Water	2-6
3 RISK EVALUATION SUMMARY	3-1
3.1 Chemicals of Interest	3-1
3.2 Conceptual Site Model	3-1
3.3 Risk Screening Methods	3-2
3.4 Risk Screening Results	3-5
4 SOIL-TO-SEDIMENT SCREENING	4-1
4.1 Soil Conditions	4-2
4.2 Stormwater Runoff	4-2
4.3 Soil Risk Screening Results	4-3
4.4 Sediment Results	4-3
4.5 Summary	4-4
5 SOURCE CONTROL MEASURES	5-1
5.1 Soil Management Areas	5-1
5.2 Source Control Measures	5-1
5.3 Schedule for Implementation	5-1
6 CONTAMINATED MEDIA MANAGEMENT PLAN	6-1
6.1 Soil	6-1

CONTENTS (Continued)

6.2	Groundwater	6-3
6.3	Stormwater	6-4
6.4	Dust Control	6-5
6.5	Construction Equipment Decontamination	6-5
6.6	Site Security	6-5
7	SAMPLING AND ANALYSIS PLAN	7-1
7.1	Purpose of Sampling	7-1
7.2	Soil Sampling Methods	7-1
7.3	Soil Sample Preparation for Chemical Analysis	7-3
7.4	Laboratory Analyses for Soil Samples	7-4
7.5	Stormwater Sampling Procedures	7-4
7.6	Laboratory Test Methods and Reporting Limits	7-5
7.7	Quality Assurance Samples	7-6
7.8	Work Documentation	7-6
7.9	Sample Containers, Preservation, and Handling	7-7
7.10	Sample Labeling	7-7
7.11	Sample Custody	7-7
7.12	Data Evaluation, Validation, Reduction, and Reporting	7-9
7.13	Decontamination Procedures	7-11
8	DEVELOPMENT AND PERMITTING PROCESS	8-1
9	ENGINEERING AND INSTITUTIONAL CONTROL PLAN	9-1
10	PROJECT CLOSEOUT REPORT	10-1
11	IMPLEMENTATION SCHEDULE	11-1
LIMITATIONS		
REFERENCES		
TABLES		
FIGURES		

CONTENTS (Continued)

APPENDIX A LEVEL I SCOPING ECOLOGICAL RISK ASSESSMENT

APPENDIX B RISK SCREENING

APPENDIX C SITE HEALTH AND SAFETY PLAN

TABLES AND ILLUSTRATIONS

Following Report:

Tables

- 1 Metals in Surface Soil (0-0.5 feet bgs)
- 2 TPH, PAHs, and VOCs in Surface Soil (0-0.5 feet bgs)
- 3 Butyltins in Surface Soil (0-0.5 feet bgs)
- 4 Metals in Subsurface Soil (greater than 6 feet bgs)
- 5 TPH, PAHs, and VOCs in Subsurface Soil (greater than 6 feet bgs)
- 6 Butyltins in Subsurface Soil (greater than 6 feet bgs)
- 7 Total/Dissolved Metals in Groundwater (mg/L)
- 8 PAHs in Groundwater (ug/L)
- 9 Metals in Surface Water (ug/L)
- 10 Benzo(a)pyrene in Surface Soil (0-0.5 feet bgs) within 100 feet of Top of Riverbank (ug/kg)
- 11 Detections of Semivolatile Organic Compounds in Sediment (ug/kg)
- 12 Summary of Potential Sources and Pathways to the Willamette River

Figures

- 1 Site Location
- 2 Site Features and Sample Locations
- 3 Conceptual Site Model of Potential Human Exposure Pathways
- 4 Conceptual Site Model of Potential Ecological Exposure Pathways
- 5 Areas Requiring Source Control Measures

ACRONYMS AND ABBREVIATIONS

90% UCL	90 percent upper confidence limit
AACP	Advanced American Construction Properties, LLC
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylene
COC	chain of custody
COE	U.S. Army Corps of Engineers
COI	chemical of interest
COP	City of Portland
CSM	conceptual site model
cy	cubic yard
DEQ	Department of Environmental Quality (Oregon)
FSDS	field sampling data sheet
GCC	General Construction Company
GeoDesign	GeoDesign, Inc.
HASP	health and safety plan
Jacobs	Jacobs Engineering Group, Inc.
Jacobsen	Jacobsen Construction Company
MFA	Maul Foster & Alongi, Inc.
MFC	Marine Finance Corporation
mg/kg	milligrams per kilogram
MOU	Memorandum of Understanding
MRL	method reporting limit
µg/kg	micrograms per kilogram
NPL	National Priorities List
PAH	polycyclic aromatic hydrocarbon
PBS	PBS Environmental
PCB	polychlorinated biphenyl
PEC	probable effect concentration
Phase II ESA	Phase II Environmental Site Assessment
PPA	prospective purchaser agreement
ppm	parts per million
PRG	preliminary remediation goal
QA/QC	quality assurance/quality control
RA	risk assessment
RBC	risk-based concentration

ACRONYMS AND ABBREVIATIONS (Continued)

RM	river mile
SAP	sampling and analysis plan
SCE	source control evaluation
SCP	source control plan
SLV	screening level value
SMA	soil management area
SVOC	semivolatile organic compound
TBT	tri- <i>n</i> -butyltin
TPH	total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
XPA	Expanded Preliminary Assessment Data Report

1 INTRODUCTION

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster and Alongi, Inc. (MFA) has prepared this Source Control Evaluation (SCE) and Source Control Plan (SCP) for the Marine Finance Corporation (MFC) property at 8444 N.W. St. Helens Road, Portland, Oregon (see Figure 1). The report evaluates potentially complete contaminant transport pathways to the Willamette River and recommends source control measures for the upland part of the site.

AACP is currently negotiating a prospective purchaser agreement (PPA) for the property with the Oregon Department of Environmental Quality (DEQ). To focus the scope of work for the PPA, the DEQ requested a screening-level risk assessment (RA) and an SCE. MFA provided the screening-level RA for soil and groundwater on August 13, 2004 (MFA, 2004). In a letter dated August 24, 2004, the DEQ concurred with the conclusions of the RA and also mentioned that data were adequate to conduct an SCE. Depending on the results of the SCE, the DEQ noted that source control measures should be proposed. After its approval of the SCE and source control measures, the DEQ noted that the scope of work for the PPA would be limited to implementation of source control measures outlined in this report. This report provides the scope of work for the PPA.

Based on the results of the risk screening and SCE, soil concentrations in some areas exceed source control screening criteria. Concentrations of arsenic in almost all surface and subsurface soil samples were above U.S. Environmental Protection Agency (USEPA) Region 9 industrial soil preliminary remediation goals (PRGs), but were consistent with naturally occurring concentrations in soil at other locations in the region. No risk management actions appear to be required for arsenic in soil. The concentration of copper in surface soil from one sample location and the concentration of lead in soil from another sample location were above their respective sediment probable effects concentrations (PECs). Source control measures are necessary for soil in these areas. The concentrations of benzo(a)pyrene in several surface soil samples are above both human health risk-based concentrations (RBCs) and sediment PECs. Copper, lead, and benzo(a)pyrene appear to be the only contaminant of potential concern in upland soil with the potential to be transported to the Willamette River at levels that may pose risks to aquatic organisms. Source control measures will involve limited excavation of soil with concentrations exceeding relevant sediment screening levels and construction of a stormwater management system. MFA recommends implementation of source control measures during development of the property. Excavation of impacted soil will mitigate

potential risks associated with worker exposures to soil and possible erosion and transport of impacted soil to the river. Development of an engineered stormwater management system to manage stormwater runoff will prevent chemicals in soil from migrating to the Willamette River. As part of the scope of work for the PPA, DEQ also will require quarterly stormwater sampling for one year. Analytes will include polycyclic aromatic hydrocarbons (PAHs), metals (arsenic, cadmium, chromium, copper, lead, nickel, and zinc), and petroleum hydrocarbons (TPH).

1.1 Regulatory Framework for Source Control Evaluation

The site is located adjacent to river mile (RM) 6 along the Willamette River in the Portland Harbor. The Portland Harbor was added to the National Priorities List (NPL) under the Comprehensive Environmental Response, Compensation, and Liability Act and National Oil and Hazardous Substances Contingency Plan on December 1, 2000. After the Harbor was added to the NPL, a Memorandum of Understanding (MOU) was developed that established the relationship between natural resource trustees. The MOU states that the DEQ is responsible for the identification and control of sources of contamination to Portland Harbor, and the USEPA is responsible for investigating the nature and extent of in-water contamination, estimating risks to human health and the environment resulting from in-water contamination, identifying and evaluating remedial action alternatives, and selecting a remedial action alternative to address in-water contamination.

The MOU also requires the DEQ and the USEPA to jointly develop a Source Control Strategy. The Source Control Strategy will not only address hazardous substance releases from upland sites being investigated under ORS 465, but also will address waste management activities, permitted and unpermitted stormwater discharges, overland runoff and other nonpoint sources, permitted discharges, direct discharges resulting from spills or other over- or in-water releases, and upstream contributions. The DEQ and the USEPA currently are jointly drafting a Source Control Strategy. The DEQ provided AACP with a copy of the draft Source Control Evaluation Criteria attached to the August 24 letter for use in the SCE for the property.

1.2 Purposes of the Source Control Evaluation and Source Control Plan

The purposes of the SCE are to evaluate whether chemicals in surface soil, surface water, groundwater, and stormwater at the site can migrate to the Willamette River at concentrations that may pose unacceptable risks to human health and the environment, and to identify contaminant sources requiring control. Possible transport mechanisms include overland transport, groundwater to sediment and/or surface water, direct over-water

discharge, direct discharge via stormwater or wastewater, and riverbank erosion. Findings of the screening-level RA for the site indicated that chemicals in groundwater are unlikely to pose unacceptable risks to potential human or ecological receptors (MFA, 2004). However, the possibility that chemicals in soil could pose unacceptable risks to on-site workers and migrate to Willamette River sediment at unacceptable levels could not be ruled out. This SCE presents the findings of the risk screening, and focuses on evaluating the risk that chemicals in surface soil may pose to relevant human and ecological receptors at or near the site. The elements of the SCE were outlined in the Draft Source Control Evaluation Criteria attached to the DEQ's August 24, 2004, letter.

The SCP will address areas of concern in the upland part of the site that require management because of the potential risks that contaminants may pose to human health and the environment. The scope of work for the PPA will be implementation of the SCP. The elements of the SCP were discussed with the DEQ on August 23 and September 10, 2004.

2 SITE BACKGROUND

This section provides background information such as site setting, site history, and current and reasonably likely future beneficial uses of land and water. The background information provides the conceptual foundation for the SCE. More detailed relevant background information is presented in the Phase One Environmental Assessment Report (PBS Environmental [PBS], 1993), the Preliminary Assessment and Expanded Preliminary Assessment Work Plan (Jacobs Engineering Group, Inc. [Jacobs], 2000a), the Expanded Preliminary Assessment Data Report (XPA) (Jacobs, 2000b), and the Phase II Environmental Site Assessment (Phase II ESA) (GeoDesign, Inc. [GeoDesign], 2003).

2.1 Site Description

The MFC site includes approximately 7.46 acres of land along the west bank of RM 6 of the Willamette River in Portland, Oregon (see Figure 1). The site is adjacent to a 6-mile stretch of the Lower Willamette River identified as a Superfund Site in 2000. This Superfund Site, referred to as the Portland Harbor, is between the upstream ends of Sauvie Island (RM 3.5) and Swan Island (RM 9.5). The St. Johns Bridge passes over the site, and approximately two-thirds of the property is located north of the bridge (see Figure 2). The property is flat to gently sloping toward the river. The site is located in section 11, township 1N, range 1W, Willamette Meridian, and includes tax lots 500, 600, and 700 on Map #11 1N 1W; 300 on Map #11 1N 1W AC; and 100, 101, 500, 600, and 700 on Map #11 1N 1W DA.

Presently, the site is used for temporary equipment storage for painting of the St. Johns Bridge, office operations for an import/export company, studio space for a metal sculptor, and tugboat moorage and operations. Structures at the site include two metal Quonset huts, a wood-frame modular office building, a small trailer house, a small wooden shed, and two docks north of the St. Johns Bridge, including a floating-home builder's dock as well as a gangway and docks south of the St. Johns Bridge leased by a tugboat company, Hendren Tow Boat. The actively used areas of the site have limited vegetative cover and consist mostly of gravel. A riprap-armored embankment is located adjacent to the river.

A groundwater seep is located in the northwest corner of the site (at location SW-1 in Figure 2). The seep emerges from the ground and pools in a small area approximately 2 to 3 feet in diameter. A stormwater discharge pipe is located about 50 feet from the groundwater seep at or near the northern property boundary (location SW-2 in Figure 2).

The pipe conveys stormwater from property west of the site. There are no stormwater catch basins at the site.

2.2 Site History

Historically, a number of businesses that may have handled hazardous substances have operated at the site. The following summary is from Jacob's XPA (Jacobs, 2000b).

Since the 1920s or earlier, the site has been used by various marine construction and tow boat/barge companies (PBS, 1993). In the past, the site also had a warehouse in the south part of the site, as well as smaller buildings including offices, a tavern, and a private residence. Between 1936 and 1940, the area was built up with fill material. The current Quonset huts were constructed before 1957. Most of the site was leased to two metal salvage companies from 1988 to 1993.

In 1926, the area south the St. Johns Bridge was occupied by Jacobsen Construction Company (Jacobsen), which performed pile driving, dock work, and bridge building. Jacobsen had an equipment warehouse with an office and tool room. A dock and an overhead crane were located south of the warehouse. The adjacent property to the south was occupied by government moorings (PBS, 1993).

A cross-river ferry slip and landing were present through the 1920s on the north part of the site (see Figure 2). Apparently, the ferry operated until approximately 1932, when the St. Johns Bridge was constructed (PBS, 1993). A tavern, a private dwelling, and a garage were located immediately south of the bridge and north of Jacobsen's operations. Houseboats occupied the shoreline north of the bridge.

By 1943, the area south of the bridge was occupied by Portland Tug and Barge, which was owned by Jacobsen (PBS, 1993). The equipment warehouse remained, and a new one-story office building was constructed north of the bridge. The office building was connected to the public sewer system.

By 1948, fill material had been placed north of the bridge, bringing the ground surface close to its present elevation. The U.S. Army Corps of Engineers (COE) has no records of placement of dredge spoils on the site, suggesting that the fill material likely was obtained from private dredging operations (PBS, 1993). A 1948 aerial photo shows two elongated buildings, which appear to be warehouses, in the center of the area north of the bridge.

General Construction Company (GCC) purchased the property from Jacobsen in approximately 1953. At approximately this time, the COE occupied the government mooring property south of the site. Based on a review of aerial photographs by Jacobs, the

current Quonset huts were constructed before 1957. The original warehouse south of the bridge was demolished in October 1965.

In 1972, GCC filed a permit with the City of Portland (COP) for grading; surfacing; fencing of storage areas; and construction of dolphins, floats, ramps, and an oil storage building for lubricants and greases. According to Jacobs, the precise location of the oil storage building was unknown, but aerial photographs indicated that it may have been one of several ancillary structures that were constructed east of the Quonset huts between 1971 and 1972 (Jacobs, 2000b). Additional storage east of the Quonset huts and south of the bridge also was noted by Jacobs on the 1972 aerial photograph (Jacobs, 2000b).

The property was purchased from GCC by West State, Inc. in 1988. The buildings and property were leased in 1989 to Clydes Ferrous Metal Salvage, which had office space in the south half of the north Quonset hut. Abrams Scrap Metal had office space in the south Quonset hut. Scrap metal was stored east of the Quonset huts. Dutra Devine, a diving and construction company, apparently occupied the north end of the north Quonset hut and the modular office building near the north dock. Before Dutra Devine, the north end of the north Quonset hut apparently was occupied by Western Boiler Repair.

Three underground storage tanks (USTs) were located immediately east of and adjacent to the south Quonset hut (see Figure 2) and were used by GCC. Two USTs, a 10,000-gallon tank and a 20,000-gallon tank, stored diesel fuel, and a third 5,000-gallon tank stored gasoline. A fuel pumping island was near the USTs by the south Quonset hut. A fuel line also led to the dock north of the bridge and may have supplied fuel for river vessels and/or been a supply line for the USTs. The USTs were removed in 1988 after West State, Inc. purchased the property, as discussed in Section 2.3.

2.3 Previous Investigations

REH, Inc. removed the three USTs from the site in 1988. A release of diesel to soil during the UST decommissionings was reported on August 8, 1988. Contaminated soil was excavated from the tank pits to depths of 15 to 26 feet. Additional impacted soil was excavated along the former product lines. A large volume of diesel-impacted soil was removed as part of remediation, and the DEQ issued a no further action letter on February 17, 1989.

In 1997, the USEPA conducted a study of sediments of the Lower Willamette River (USEPA, 1998). As part of this study, a subsurface sediment sample was collected adjacent to the subject site, and surface sediment samples were collected both upstream and downstream of the site. Concentrations of several chemicals were elevated above apparent baseline values for the Portland Harbor in the sediment sample collected adjacent to the site. Also, the concentrations of several chemicals in samples collected

upstream and downstream of the site were lower than those in the sample collected adjacent to the site.

In September 1999, DEQ's Site Assessment program recommended an XPA at the facility. DEQ began work using a state contractor in January 2000, but MFC requested an opportunity to conduct the XPA themselves. DEQ and MFC signed a voluntary agreement in April 2000, but MFC was unable to meet the terms of the agreement. DEQ declared the site an Orphan project in July 2000 after determining that MFC was "unwilling" to investigate or clean up the site.

In August 2000, DEQ retained Jacobs to perform an XPA that included collecting six groundwater samples, five Willamette River sediment samples, 13 soil samples, and two surface water samples. Samples were collected at locations where contaminants may have been released, based on information regarding historical site operations. Soil, groundwater, and surface water samples were analyzed for metals, TPH, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and butyltins.

Jacobs (2000b) reported that TPH had been detected in surface soil at most sample locations. Also, Jacobs noted that concentrations of several metals in soil were elevated above natural background levels at several locations. Two VOCs had been detected in surface soil samples, but none had been detected in subsurface soil. Several SVOCs had been detected in both surface and subsurface soil. PCBs had not been detected in any soil sample. Tri-*n*-butyltin (TBT) had been observed in soil at several locations. Also, several chemicals had been detected in groundwater grab samples at concentrations above the respective USEPA Region 9 PRGs for tap water (Jacobs, 2000b).

In May 2001, DEQ removed abandoned waste containers, batteries, and drums (containing oily liquids) from the site.

Based on a review of the Jacobs investigation results, the DEQ identified additional tasks necessary to complete characterization of the nature and extent of chemical impacts to the upland part of the site. These tasks included: 1) soil sampling from two or more discrete depth intervals at locations with the highest contaminant levels in surface soil (SS-2, SS-7, SS-9) and from the former UST location; 2) quarterly monitoring of groundwater (one-year minimum) at approximately six locations across the eastern part of the site to assess shallow groundwater contaminants potentially discharging to the Willamette River; and 3) collection of additional surface soil samples from approximately ten locations to better characterize the lateral extent of surface contamination. In April 2003, GeoDesign began a phased investigation of soil and groundwater to address the assessment tasks identified by the DEQ.

The Phase II ESA report presented analytical results of subsurface soil samples and the first round of groundwater monitoring (GeoDesign, 2003). It was reported that diesel- and

heavy-oil-range hydrocarbons had been detected in two of the eight subsurface soil samples analyzed. Reported concentrations were below the DEQ's Level 1 Soil Matrix Cleanup Standard. Three subsurface soil samples were analyzed for VOCs, and 2-chlorotoluene was detected in one of the samples. Eleven subsurface soil samples were analyzed for PAHs, and several PAHs were detected in soil samples. Of the metals analyzed in soil, only arsenic and lead were reported at concentrations above a potentially relevant PRG (GeoDesign, 2003).

Six groundwater monitoring wells were installed at the site to characterize chemical concentrations in shallow groundwater that may discharge to the Willamette River. The wells are screened in sand with occasional gravel between 5 feet and 30 feet below ground surface (bgs). The initial groundwater monitoring event was conducted in April 2003 (GeoDesign, 2003). The highest detected concentration of total arsenic in groundwater was above the tap water PRG, and the highest total lead concentration in groundwater was above a potentially applicable DEQ RBC. Several PAHs were detected at concentrations below potentially relevant RBCs and PRGs. VOCs were not detected in groundwater samples (GeoDesign, 2003).

GeoDesign conducted additional groundwater sampling events in July 2003 and April 2004. Additional surface soil samples were collected in August 2003. The additional soil and groundwater data were included in the screening-level risk evaluation (MFA, 2004). Results of the risk evaluation are summarized in Section 3.

2.4 Geology and Hydrogeology

The MFC property is between U.S. Highway 30 (St. Helens Road) and the Willamette River, at the base of the Portland Hills (see Figure 1). The geology of the region is characterized generally by a broad structural depression or basin bordered by the Cascade Mountains on the east and the Coast Range Mountains on the west (Jacobs, 2000b). Geologic formations in the basin are also folded and dissected by a number of northwest-trending faults. The Tualatin Mountains form a northwest-trending anticlinal ridge that is faulted along its eastern flank by the Portland Hills fault. The Willamette River flows along the base of the eastern side of the Tualatin Mountains. A number of additional faults are located approximately parallel or perpendicular to the Portland Hills fault and are mapped along or near the Tualatin Mountains. An inferred graben is identified immediately southeast of the site.

The site is constructed on what is likely a combination of fill material and natural terrace deposits created by the Willamette River. Fill material appears to be present from ground surface to approximately 18 to 23 feet bgs. The inferred contact between fill and native material is a layer of wood fragments thought to represent the former land surface (Jacobs, 2000b). Aerial photographs from 1938 and 1940 and from 1961 and 1972 indicate that a

significant amount of fill material was added to the site during both of these periods (Jacobs 2000a).

Terrace deposits unconformably overlie alluvium of the Willamette River basin. These deposits are of Pleistocene age and are composed of indistinguishable, unconsolidated, stratified sand and silt. The terrace deposits at the site are approximately 10 feet thick, while the alluvium deposits are known to have a maximum thickness of 100 feet. Columbia River basalts are believed to underlie these alluvial deposits at various depths near the site. Lacustrine deposits consisting of unconsolidated boulders, gravels, sand, and silt with a thickness on the order of hundreds of feet lie beneath the alluvium deposits. The Pliocene Troutdale Formation typically underlies the alluvial deposits in the region and consists of conglomerate, sandstone, shale, and mudstone. The thickness of the Troutdale Formation ranges from zero to more than 1,100 feet.

Based on static water levels measured in on-site monitoring wells, groundwater is approximately 7 to 24 feet bgs, depending on location and season. In May 2003, the hydraulic gradient was east-northeast toward the Willamette River at a gradient of approximately 0.045 vertical feet per lineal foot (GeoDesign, 2003).

2.5 Beneficial Uses of Land and Water

The site currently is used to support commercial and industrial operations, and has been used as a commercial/industrial property since at least the 1920s (PBS, 1993). No residences are present on the site, and with the possible exception of a private dwelling located on the site in the 1930s, the site has not been used to support residential developments in the recent past. Riverfront properties near the site are used for industrial purposes. Land west of St. Helens Road near the site is a mixture of residential, commercial, industrial, and recreational properties (Jacobs, 2000a).

It is likely that the property will continue to be used for commercial and industrial purposes in the foreseeable future. The site has been used historically and is used currently for commercial and industrial purposes, and neighboring riverfront properties also are used for these purposes. In addition, the prospective purchaser (AACP) is planning to use the site for river-related commercial/industrial purposes. It is unlikely that the site will support residences in the foreseeable future.

Groundwater under the site is not being used or anticipated to be used as a source of drinking water (Jacobs, 2000a). On-site facilities are currently supplied with municipal water. It appears that the site has been supplied with municipal water since the 1920s (PBS, 1993).

Based on water use information in Jacobs (2000a), 52 water wells are located within a 1-square-mile area around the site. Three of these wells were identified as water supply

wells, and one of the water supply wells was listed as abandoned. The two wells that are presumed to be active are located upgradient of the site. Results of the well search indicate that groundwater near the site is not being used for irrigation, industrial, engineering, or livestock-watering purposes. Also, there is no trend to indicate that consumptive uses of groundwater are increasing near the site. Based on the lack of significant impacts in shallow groundwater under the site, there is no reason to believe that the beneficial uses of deep groundwater have been impacted.

Shallow groundwater at the site may discharge to the Willamette River. The Willamette River supports a number of highly valued aquatic organisms, and groundwater contributions to aquatic habitats in the river are an important beneficial use. Current surface water uses of the Willamette River in the region include aesthetic quality, recreation (including recreational and subsistence fishing), transportation, wetlands, fishing and hunting, and fish and wildlife habitat (including anadromous fish passage).

In summary, it appears unlikely that shallow groundwater at the site will be used as a water supply source for domestic, agricultural, or industrial purposes in the foreseeable future. Municipal water is reliable and relatively inexpensive, and is likely to remain the sole water source for the site in the near future. The most important beneficial use of groundwater at the site appears to be possible discharge to the Willamette River.

3 RISK EVALUATION SUMMARY

MFA recently assembled existing sample results for soil, groundwater, and surface water at the site (MFA, 2004). Analytical results were compared to risk-based screening concentrations for relevant exposure scenarios at the site. Findings of the screening assessment are summarized below.

3.1 Chemicals of Interest

The chemicals of interest (COIs) in soil include metals, TPH, PAHs, VOCs, and butyltins. COIs for groundwater include metals and PAHs.

3.2 Conceptual Site Model

The conceptual site model (CSM) describes potential chemical sources, release mechanisms, environmental transport processes, and receptors. The primary purpose of the preliminary CSM is to identify potential pathways by which human and ecological receptors may be exposed to site-related chemicals. The processes by which these receptors may be impacted by site-related chemicals are then investigated and evaluated. Potential exposure scenarios that involve human receptors are presented in Figure 3, and those involving ecological receptors are presented in Figure 4.

The only known primary sources of contamination have been removed from the site; former USTs and a large amount of petroleum-impacted soil were removed in 1989, and DEQ removed a large volume of waste material in 2001.

Findings of the Level I Scoping Ecological Risk Assessment (see Appendix A) indicate that populations of terrestrial ecological receptors are unlikely to have significant contact with chemicals in surface soil at the site. The primary pathways by which human and ecological receptors may contact chemicals in soil and groundwater are as follows:

- Commercial/Industrial workers may directly contact (e.g., by ingestion, dermal contact, inhalation) chemicals in surface soil.
- Excavation and construction workers may directly contact (e.g., by ingestion, dermal contact, inhalation) chemicals in surface and subsurface soil.

- Commercial/Industrial workers may have indirect exposure to volatile chemicals that migrate from soil or groundwater to indoor or outdoor air.
- Construction and excavation workers may come into direct contact with groundwater in excavations.
- Aquatic ecological receptors (including sediment-dwelling biota) may contact chemicals that migrate from soil via stormwater runoff to surface water and sediment of the Willamette River.
- Aquatic ecological receptors (including sediment-dwelling biota) may contact chemicals that migrate from shallow groundwater to surface water and sediment of the Willamette River.

3.3 Risk Screening Methods

Concentrations of COIs in soil, groundwater, and surface water were compared to relevant risk-based screening concentrations for each potential exposure scenario. The risk-based screening values are conservative estimates of threshold concentrations for adverse effects, given long-term exposure to contaminated environmental media. Various risk-based screening values have been calculated using target risk levels that are consistent with the DEQ's acceptable risk levels. The risk-based screening concentrations used to evaluate soil and groundwater conditions are described below.

3.3.1 Soil

To evaluate potential risks that workers might experience if they were exposed to metals or TBT in surface and subsurface soil, concentrations of these COIs were compared to USEPA Region 9 PRGs protective of industrial workers (USEPA, 2002a). The USEPA PRGs for carcinogens have a target risk level of one in a million (10^{-6}) excess cancer risk, and the target risk level for noncarcinogens is a hazard quotient of one. These PRGs consider incidental soil ingestion, inhalation of windborne soil particulates, and dermal contact with soil. Most metals are not volatile at ambient temperatures, and volatilization to indoor and outdoor air are considered insignificant exposure pathways. When available, concentrations of metals were also compared to DEQ's default background concentrations (DEQ, 2002). For several metals with no DEQ's default background value, concentrations were compared with 90th percentile values for soil of Clark County Washington (Ecology, 1994). If concentrations of a COI are below the relevant risk-based screening value or background concentration for a particular exposure scenario, it is inferred that the chemical will not pose unacceptable risks to the target receptor.

Based on site history and descriptions of soil sampling locations (Jacobs, 2000a; GeoDesign, 2003), it is likely that most of the detected TPH and PAHs originated from petroleum releases. Therefore, generic RBCs from the DEQ's Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites (DEQ, 2003) were used to evaluate TPH and PAHs in soil. The RBCs for occupational, construction, and excavation workers are based on direct contact exposure routes such as incidental soil ingestion, inhalation of vapors or particulates, and dermal contact. Most of the petroleum constituents detected in soil at the site do not have chemical and physical properties that would cause them to volatilize and migrate in the vapor phase to indoor or outdoor air under natural conditions. Because these COIs cannot pose unacceptable risks through these indirect exposure scenarios (i.e., vapor migration), no generic RBCs have been listed by the DEQ (2003), and the pathways are not considered complete.

No DEQ RBCs were available for the three VOCs detected in either surface or subsurface soil. Concentrations of these VOCs were compared with USEPA Region 9 industrial worker PRGs for soil.

To evaluate the potential for COIs in soil to migrate to Willamette River sediment at levels that may pose unacceptable risks to sediment-dwelling biota, concentrations in surface soil were compared with PECs for sediment. Comparison of soil concentrations to sediment PECs has been used to evaluate the potential for soil to impact sediment at other sites in Portland Harbor. A PEC is the concentration of a chemical in sediment that is associated with adverse effects in sediment toxicity tests. For a variety of reasons, some PECs are better predictors of chemical toxicity than others (MacDonald et al., 2000). For this evaluation, only consensus-based PECs that were classified as reliable indicators of sediment toxicity (see MacDonald et al., 2000; Ingersoll et al., 2000) were used as soil screening values. Unlike many other PECs, reliable consensus-based PECs have been demonstrated to correctly predict the toxicity of chemicals in over 75 percent of the sediment samples evaluated (see MacDonald et al., 2000; Ingersoll et al., 2000).

PAHs are the primary soil COIs that could migrate to sediment and potentially bioaccumulate in the aquatic food chain. In general, PAHs are metabolized by vertebrates (i.e., fish, birds, mammals) and tend not to accumulate in tissues. However, some PAHs can bioaccumulate from sediment into tissues of some aquatic invertebrates, and fish or other consumers of aquatic biota may contact PAHs through their diets. Consistent with the approach used at other sites, DEQ screening level values (SLVs) for bioaccumulative PAHs in sediment were also used to evaluate the soil-to-sediment migration pathway. The only PAH in soil for which a sediment bioaccumulation SLV was available was benzo(a)pyrene (DEQ, 2001).

No reliable PEC was available for TBT. To evaluate whether TBT in surface soil can migrate to the Willamette River at unacceptable levels, soil concentrations were compared to the apparent baseline concentration of TBT in sediment of the Lower

Willamette River (USEPA, 1998). Surface soil concentrations were also compared to the DEQ bioaccumulation SLV for TBT in sediment (DEQ, 2001).

3.3.2 Groundwater

Groundwater at the site is not used for drinking purposes. Because the depth to groundwater over most of the site is below the depth of most excavations (approximately 10 feet bgs), it is unlikely that potential future excavations at the site would extend to groundwater. However, for the purposes of the screening risk evaluation, it was assumed that shallow groundwater could be used as a domestic water source and that excavation workers could directly contact groundwater. Concentrations of COIs in groundwater were compared to USEPA Region 9 tap water PRGs (USEPA, 2002a). These PRGs were developed assuming residents could have long-term exposure to chemicals in tap water through ingestion and inhalation of vapors. Also, concentrations of COIs were compared to DEQ RBCs for direct contact with groundwater in excavations.

If COIs were to migrate in groundwater and discharge to the Willamette river, benthic organisms could contact these chemicals in sediment pore water at the groundwater/surface water interface, and other aquatic organisms could contact COIs in surface water. Also, it is assumed that if COIs were to migrate to surface water, they could bioaccumulate in fish tissues, and recreational fishers could contact these chemicals if they consumed fish harvested near the site.

To evaluate COIs in groundwater, it was assumed that aquatic organisms (including harvestable fish) would have long-term exposure to concentrations observed in groundwater. As a result, concentrations of COIs in groundwater were compared to both DEQ SLVs protective of aquatic biota (DEQ, 2001) and USEPA ambient water quality criteria for humans that harvest and consume fish (USEPA, 2002b).

3.3.3 Surface Water

A pipe and seep are located in the former ferry ramp area near the northern property boundary. Jacobs (2000a) noted that the pipe apparently collected precipitation infiltrating the northern part of the site as well as the property north of the MFC property, and the seep may be the result of leakage from the stormwater pipe. To evaluate risks that COIs in site surface water may pose to aquatic organisms, chemical concentrations in surface water from a stormwater pipe and a seep were compared to DEQ SLVs protective of aquatic biota (DEQ, 2001). Also, it was assumed that chemicals could migrate from the seep to the river and ultimately accumulate in the tissues of fish. USEPA ambient water quality criteria for humans that harvest and consume fish (USEPA, 2002b) were used to evaluate this exposure scenario.

3.4 Risk Screening Results

Results of the screening level risk evaluation for surface soil, subsurface soil, groundwater, and surface water are presented below for each primary exposure scenario.

3.4.1 Surface Soil—Direct Contact by Workers

As shown in Tables 1, 2, and 3, USEPA Region 9 industrial soil PRGs were available for 19 of the 23 chemicals evaluated in surface soil. With the exception of arsenic, concentrations of all metals in surface soil were below relevant PRGs (see Table 1). Arsenic concentrations in 7 of the 21 surface soil samples were above the DEQ default background concentration of 7 milligrams per kilogram (mg/kg). The median concentration of arsenic in surface soil is 4.1 mg/kg (see Table 1). As reported by GeoDesign in the Phase II ESA (GeoDesign, 2003), the median concentration of arsenic in surface soil at the site is within the range of naturally occurring arsenic in soil at other locations in the region. For example, the median concentration of arsenic in soil of Oregon is 5.1 mg/kg, and the median concentration in Clark County, Washington is 5.8 mg/kg (GeoDesign, 2003).

The concentrations of diesel-range petroleum hydrocarbons in surface soil are below generic RBCs for TPH as diesel (see Table 2). Also, TPH concentrations are below the estimated residual saturation concentration (a level that may indicate the presence of mobile product) of 10,000 mg/kg (DEQ, 2003). Although no attempt was made to formally score the site using DEQ's Soil Matrix standards, it is most likely that the Level 2 Soil Matrix Cleanup Levels would be applicable. The Level 2 Soil Matrix Cleanup Level for diesel or other nongasoline petroleum hydrocarbon contamination is 500 mg/kg. The concentration of TPH as diesel in the soil from sample location SS-6 was above this soil matrix concentration, and heavy-oil-range TPH concentrations in soil samples from SS-6 and SS-12 exceeded the soil matrix level.

Eighteen PAHs were detected in surface soil samples collected at the site (see Table 2). DEQ RBCs were available for 13 PAHs. With the exception of benzo(a)pyrene, the maximum detected concentrations of all PAHs in surface soil were below relevant DEQ RBCs (see Table 2). Concentrations of benzo(a)pyrene in soil from sample locations SS-7, SS-12, SS-16, and SS-21 were above the DEQ RBC for occupational workers.

Workers are unlikely to constrain exposure activities to just the locations with elevated concentrations of benzo(a)pyrene. Both the USEPA (1992) and the DEQ typically assume that workers can move over the entire exposure unit, and recommend the use of an estimate of the average concentration in soil to evaluate risks. The DEQ uses the 90 percent upper confidence limit (90% UCL) about the mean to characterize the average concentration in soil that a receptor may experience. The 90% UCL is a value that has a 90 percent probability of being greater than the true population mean. The 90% UCL

provides an estimate of the population mean that is biased on the high side to account for the uncertainty introduced by extrapolating from a sample to the population.

The mean concentration of benzo(a)pyrene in surface soil is 132 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and is below the industrial PRG of 270 $\mu\text{g}/\text{kg}$ (see Table 2). The 90% UCL about the mean was used as an estimate of the concentration in soil that on-site workers may contact on a long-term basis. Distributional characteristics of a data set will determine the preferred statistical method for estimating a UCL. Typically, if data appear to fit a normal or lognormal distribution, parametric methods for estimating a UCL are preferred. Various nonparametric methods can be used if data do not meet the assumptions of parametric statistics. ProUCL Version 3.0 is a software program developed by the USEPA that can estimate UCLs, using a variety of different statistical methods, depending on distributional characteristics of data. This software program was used to calculate the 90% UCL for benzo(a)pyrene in surface soil; the output file is included as Appendix B. The 90% UCL about the mean concentration of benzo(a)pyrene is approximately 200 $\mu\text{g}/\text{kg}$ and is below the PRG. As a result, workers with long-term exposure to benzo(a)pyrene in surface soil are not expected to experience unacceptable risks.

Two VOCs (acetone and trichlorofluoromethane) were detected in surface soil at the site (see Table 2). Acetone was reported in soil from SS-6 at a concentration of 66 $\mu\text{g}/\text{kg}$, and the concentration of trichlorofluoromethane in the sample from SS-9 was 10 $\mu\text{g}/\text{kg}$. The USEPA Region 9 industrial soil PRGs for acetone and trichlorofluoromethane are 6,000 mg/kg and 2,000 mg/kg , respectively (USEPA, 2002a). Because concentrations of both VOCs are several orders of magnitude below PRGs, it is inferred that VOCs in soil are unlikely to pose unacceptable risks to on-site workers.

Butyltins were detected in several surface soil samples (see Table 3). Butyltins are likely associated with fill material dredged from the Willamette River. The maximum detected concentration of TBT in surface soil was 120 $\mu\text{g}/\text{kg}$. The USEPA Region 9 industrial soil PRG for tributyltin oxide is 180 mg/kg (USEPA, 2002a). Because the maximum detected concentration of TBT is several orders of magnitude below the PRG, the chemical is not expected to pose unacceptable risks to on-site workers.

3.4.2 Subsurface Soil—Direct Contact by Workers

As with surface soil, USEPA Region 9 PRGs were available for 19 of the 23 chemicals evaluated in subsurface soil (see Tables 4, 5, and 6). Again, only arsenic was detected in subsurface soil at concentrations above the soil PRG (see Table 4). However, all concentrations of arsenic in subsurface soil are below the DEQ default background concentration of arsenic.

The maximum detected concentration of diesel-range petroleum hydrocarbons in subsurface soil (490 mg/kg) is below relevant generic RBCs (see Table 5). Heavy-oil-range petroleum hydrocarbons were detected in subsurface soil from sample location SB-4 at a concentration of 1,100 mg/kg, and this concentration is above the Level 2 Soil Matrix Cleanup Level for diesel or other nongasoline petroleum hydrocarbon contamination of 500 mg/kg (see Table 5).

Twelve PAHs were detected in subsurface soil at the site (see Table 5). DEQ RBCs were available for ten of these PAHs. Concentrations of all PAHs in subsurface soil were below relevant DEQ RBCs (see Table 5). As a result, PAHs in subsurface soil are unlikely to pose unacceptable risks to potential human receptors.

2-Chlorotoluene was detected in subsurface soil from sample location B-2 at a concentration of 266 µg/kg (see Table 5). The USEPA Region 9 industrial soil PRG for o-chlorotoluene (a synonym for 2-chlorotoluene) is 560 mg/kg (USEPA, 2002a). Because the detected concentration of 2-chlorotoluene is several orders of magnitude lower than the PRG, it is unlikely that VOCs in subsurface soil could pose unacceptable risks to on-site workers.

Butyltins were detected at relatively low levels in soil from sample location SB-5, but the concentration of TBT in this sample was below the method reporting limit (MRL) and below the soil PRG (see Table 6). No PRGs were available for the butyltins that were detected in the sample (USEPA, 2002a).

3.4.3 Soil Migration to Sediment of the Willamette River

Overall, there is little evidence to suggest that metals in surface soil may migrate to the Willamette River at concentrations that may pose unacceptable risks to sediment-dwelling biota. The concentration of copper in soil from sample location SS-9 was 270 mg/kg and was above the reliable consensus-based PEC of 149 mg/kg for copper (see Table 1). Also, the concentration of lead in soil from sample location SS-21 was 136 mg/kg, which is slightly above the PEC of 128 mg/kg (see Table 1).

Reliable consensus-based PECs were available for six of the 18 PAHs detected in surface soil (see Table 2). The maximum detected concentrations of all PAHs were below relevant PECs. However, PAHs almost always occur in soil and sediment as a complex mixture of covarying compounds. To evaluate the toxicity of PAH mixtures, the mixture is often expressed as the sum of the concentrations of individual PAHs (total PAHs), and sediment toxicity is predicted based on comparisons with sediment quality guidelines for total PAHs (MacDonald et al., 2000). As shown in Table 2, concentrations of total PAHs in all surface soil samples were below the reliable consensus-based PEC. Therefore, it is inferred that PAHs in surface soil are unlikely to migrate to sediment of the Willamette River at concentrations that may cause adverse effects to sediment-dwelling biota.

If PAHs in soil were to migrate to sediment, some of these chemicals could accumulate in the tissues of benthic invertebrates. Fish that prey on these invertebrates could ingest PAHs that have accumulated in tissues of prey organisms. Of the PAHs detected in soil at the site, a DEQ bioaccumulation SLV was available for only benzo(a)pyrene. Concentrations of benzo(a)pyrene exceeded the sediment bioaccumulation SLV of 100 µg/kg at the following surface soil sample locations: SS-7, SS-12, SS-15 through SS-18, SS-20, and SS-21 (see Table 2).

3.4.4 Groundwater—Direct Contact

Groundwater is not currently used as a water supply source and it is unlikely that shallow groundwater will be used as a water supply source for domestic, agricultural, or industrial purposes in the foreseeable future. For the purposes of the screening risk evaluation, it was assumed that shallow groundwater could be used as a domestic water source. This assumption was made to better determine if an institutional control may be required for groundwater.

The six on-site groundwater monitoring wells were sampled on three occasions: April 2003, July 2003, and April 2004. Groundwater samples collected during the first monitoring event (April 2003) were analyzed for total metals, and samples from the second and third events (July 2003 and April 2004) were analyzed for dissolved metals (see Table 7).

Total or dissolved arsenic was detected in 6 of the 18 groundwater samples collected at the site (see Table 7). The detected concentrations along with all of the arsenic MRLs were above the Region 9 tap water PRG. However, the concentrations of arsenic in groundwater at the site are within the range of natural arsenic concentrations in groundwater of Oregon. The maximum detected concentration of total arsenic in groundwater at the site was 19.5 µg/L, and this sample most likely had elevated levels of particulates because concentrations of several metals are elevated and differ substantially from subsequent sample results. Hinkle and Pollette (1999) report that arsenic concentrations exceeding 50 µg/L are widespread throughout the Willamette Basin. In the Phase II ESA, GeoDesign (2003) reports the results of five studies of arsenic levels in groundwater of Oregon. The median concentration of arsenic in groundwater at the site is lower than the median levels reported at all of the other Oregon locations (GeoDesign, 2003). As a result, concentrations of arsenic in groundwater appear to be consistent with naturally occurring groundwater concentrations of the region.

As shown in Table 7, no other metal was detected in groundwater samples at concentrations above a Region 9 tap water PRG. Similarly, concentrations of PAHs in groundwater are below both Region 9 tap water PRGs and RBCs protective of excavation workers that may directly contact groundwater (see Table 8).

3.4.5 Groundwater—Migration to the Willamette River

The receptors most likely to eventually contact site-related metals in groundwater would be benthic or aquatic organisms in sediment or surface water of the Willamette River. The primary route of exposure for aquatic organisms is gill uptake of dissolved metals, and as a result, ambient water quality criteria have been established for the dissolved form of metals (USEPA, 2002b).

As shown in Table 7, 12 metals were detected in groundwater in either the total or dissolved phase. DEQ aquatic biota SLVs were available for all of these metals, and USEPA human health water quality criteria for consumption of aquatic organisms were available for six of the detected metals.

Concentrations of total arsenic in groundwater samples collected in April 2003 from monitoring wells MW-2, MW-3, MW-4, and MW-5 were above the USEPA water quality criterion for fish ingestion (see Table 7). It appears that a substantial portion of the arsenic detected in these groundwater samples was associated with particulates because subsequent concentrations of dissolved arsenic in these monitoring wells were much lower. Concentrations of dissolved arsenic in groundwater samples collected in April 2004 from monitoring wells MW-4 and MW-5 were above the water quality criterion for fish ingestion. However, the MRL was also above this water quality criterion (see Table 7). Again, arsenic levels in groundwater at the site are consistent with naturally occurring groundwater concentrations at other locations in the region (GeoDesign, 2003).

Concentrations of total chromium, copper, lead, mercury, silver, and zinc in the groundwater sample collected from MW-4 in April 2003 were above relevant DEQ SLVs (see Table 7). Also, the concentration of total silver in the sample collected during the same monitoring event from MW-2 was above the DEQ SLV. Dissolved concentrations of each of these metals were below relevant DEQ SLVs in groundwater samples collected in July 2003 and April 2004 from all monitoring wells. However, it should be noted that the MRL for waterborne silver was above the DEQ SLV. It is most likely that concentrations of total metals exceeded DEQ SLVs due to particulates in the groundwater samples (GeoDesign, 2003). The dissolved form of these metals is bioavailable to aquatic biota and is the form most likely to migrate in groundwater to the Willamette River. With the exception of arsenic, concentrations of dissolved metals are below relevant screening values, and both aquatic biota and human consumers of fish near the site are unlikely to experience unacceptable risks if groundwater discharges to the river.

A total of eight PAHs were detected in groundwater samples collected at the site (see Table 8). DEQ aquatic SLVs were available for five PAHs, and human health water quality criteria for consumption of aquatic organisms were also available for five PAHs. No relevant screening value was available for benzo(ghi)perylene. The concentration of chrysene in the groundwater sample collected from MW-4 in April 2003 was above the

water quality criterion for fish ingestion. As discussed above, total concentrations of several metals in this sample were also elevated, and it is possible that a large amount of suspended material was present in this particular sample. Chrysene was not detected in groundwater samples from MW-4 in subsequent sampling events, and this PAH was not detected in samples from other on-site monitoring wells (see Table 8). However, the MRLs for chrysene were above the water quality criterion for fish ingestion. Given that chrysene was reported only in one sample from a single groundwater monitoring well, it appears unlikely that the nature and extent of chrysene impacts to groundwater are sufficient to cause unacceptable risks to people that may ingest fish caught in the Willamette River near the site. Waterborne chrysene concentrations at the point where aquatic biota may be exposed to the chemical are expected to be substantially reduced relative to concentrations in groundwater due to natural attenuation processes and mixing with ambient river water.

3.4.6 Surface Water

With the exception of barium, the concentrations of metals in the small surface water features at the site are below DEQ aquatic biota SLVs and human health water quality criteria for consumption of aquatic organisms (see Table 9). Barium occurs naturally in soil and water of the region, and it is possible that barium is present at natural levels in these surface water features. Although it is unlikely that the small surface water features at the site support significant natural aquatic communities, COIs in surface water are unlikely to cause adverse effects to aquatic organisms that may visit these features.

3.4.7 Risk Summary

- Concentrations of arsenic in almost all surface and subsurface soil samples were above USEPA Region 9 industrial soil PRGs, but were consistent with naturally occurring concentrations in soil at other locations in the region. No risk management actions appear to be required for arsenic in soil.
- The concentration of copper in surface soil from sample location SS-9 and the concentration of lead in soil from sample location SS-21 were above their respective sediment PECs.
- Heavy-oil-range TPH concentrations were above the Level 2 Soil Matrix Cleanup Level (i.e., 500 mg/kg) for diesel or other nongasoline petroleum hydrocarbon contamination in surface soil samples from SS-6 and SS-12, and in the subsurface soil sample from SB-4. No DEQ RBCs are available for heavy-oil-range TPH.

- Concentrations of benzo(a)pyrene in surface soil from sample locations SS-7, SS-12, SS-16, and SS-21 were above the DEQ RBC for occupational workers and the DEQ sediment bioaccumulation SLV. However, the site-wide 90% UCL about the mean concentration of benzo(a)pyrene in surface soil is below the industrial PRG. As a result, benzo(a)pyrene is not expected to pose unacceptable risks to workers.
- Concentrations of benzo(a)pyrene exceeded the sediment bioaccumulation SLV at sample locations SS-7, SS-12, SS-15 through SS-18, SS-20, and SS-21.
- Concentrations of total and dissolved arsenic in some groundwater samples collected from monitoring wells MW-2 through MW-5 were above the water quality criterion for fish ingestion and the Region 9 tap water PRG. The concentrations of arsenic in groundwater are consistent with naturally occurring groundwater concentrations at other locations in the region. No risk management actions appear to be required for arsenic in groundwater.
- The concentration of chrysene in the groundwater sample collected from MW-4 in April 2003 was above the water quality criterion for fish ingestion. Total concentrations of several metals in this sample were also elevated, and it is possible that this particular sample had an unusual number of suspended particles. Chrysene was not detected in groundwater samples from MW-4 in subsequent sampling events, and this PAH was not detected in samples from other on-site monitoring wells. Given that chrysene was reported only in one sample from a single groundwater monitoring well, it appears unlikely that the nature and extent of chrysene impacts to groundwater are sufficient to cause unacceptable risks to people that may ingest fish caught in the Willamette River near the site. Waterborne chrysene concentrations at the point where aquatic biota may be exposed to the chemical are expected to be substantially reduced relative to concentrations in groundwater due to natural attenuation processes and mixing with ambient river water.
- With the exception of barium, the concentrations of metals in the stormwater pipe discharge and the seep are below DEQ aquatic biota SLVs and human health water quality criteria for consumption of aquatic organisms. Barium occurs naturally in soil and water of the region and is unlikely to cause adverse effects to aquatic organisms exposed to discharges from this pipe.
- Available evidence suggests that it is unlikely that site-related chemicals in groundwater could migrate to surface water or sediment of the Willamette River at concentrations that could pose unacceptable risks to aquatic biota or humans that catch and consume aquatic organisms near the site. No risk management actions appear to be required for groundwater.

4 SOIL-TO-SEDIMENT SCREENING

The primary mechanisms by which site-related chemicals in soil could migrate to the Willamette River include leaching to groundwater that discharges to the river, and stormwater-mediated transport of eroded soil. Eroded soil could be transported through overland sheet flow to the river after storm events, or via stormwater collection and discharge systems.

The method that has been used by the DEQ to evaluate the soil-to-sediment pathway at other sites in the Portland Harbor involves the following elements (DEQ, 2004):

1. Identify potential contaminant sources.
2. Characterize the nature and extent of soil contamination in potential source areas.
3. Evaluate subsurface soils that may represent a source of groundwater contamination.
4. Use PECs and bioaccumulation screening values for sediment to screen surface soil within 100 feet of stormwater catch basins or within an area that has a high probability of eroding and being transported to the Willamette River.
5. Conduct a stormwater evaluation.
6. If soil concentrations exceed screening values, use a weight-of-evidence evaluation of site conditions to determine if contaminants in soil are likely to migrate to the river at unacceptable levels.

Elements 1 and 2 were completed as part of previous site investigations and were summarized in the screening-level risk evaluation (MFA, 2004). Elements 3 and 4 were performed as part of the screening-level risk evaluation. The risk evaluation found that chemicals in soil are unlikely to leach to groundwater and migrate to the river at levels that could pose unacceptable risks to aquatic biota (MFA, 2004). In addition, because concentrations of site-related chemicals in surface soil were generally below PECs, there is little evidence to suggest that chemicals in surface soil may migrate to the Willamette River at concentrations that may pose unacceptable risks to sediment-dwelling biota (MFA, 2004). However, several sample locations had concentrations of benzo(a)pyrene greater than the DEQ bioaccumulation sediment SLV. Based on these screening results, it is possible that impacted soil could migrate to the river and pose unacceptable risks to

human recreational fishers or higher trophic level wildlife that consume aquatic organisms that have accumulated benzo(a)pyrene in tissues.

To better evaluate the soil-to-sediment migration pathway, site-specific conditions that are likely to affect soil transport to the river are discussed below. Also, sediment data collected as part of the XPA (Jacobs, 2000b) are reviewed to better evaluate whether soil at the site may have been the source of contaminants detected in sediment.

4.1 Soil Conditions

MFA staff reviewed site conditions on September 14, 2004, within 24 hours of a storm event. The two dominant upland features at the site are a steep, heavily-armored bank comprised primarily of riprap, and a relatively flat operations area between the top of the bank and the western property boundary. Most of the surface in the operations area is covered with gravel. However, surface soil is present at several locations. Much of the soil that is not covered with gravel supports weedy vegetation.

Since most of the steep bank is composed of and armored with riprap, it appears that there is little potential for erosion over most of the bank. The upper several feet of the bank is composed of exposed soil in several locations, but it appears that less than 5 percent of the bank's surface is made up of material that could potentially erode.

4.2 Stormwater Runoff

Most of the surface of the site is permeable, and it appears that most precipitation falling on the site infiltrates the surface. No apparent stormwater collection system is present at the site, and no stormwater samples were collected as part of previous site investigations (Jacobs, 2000b; GeoDesign, 2003). Precipitation appears to pond on the surface following large storm events. Sheet runoff appears to be the most plausible mechanism by which soil could be transported to the river. However, over most of the site there were no obvious preferential pathways of stormwater flow on the surface toward the Willamette River (i.e., there was no visible evidence of scouring on the surface or along the bank that might have been expected if surface water had followed preferential flow paths).

A former ferry ramp is present near the northern property boundary (see Figure 2). It is likely that stormwater could flow down this gently sloped bank toward the river at this location, but the upland area that this feature could drain represents a small fraction of the site's surface.

A pipe is located in the former ferry ramp area near the northern property boundary. Jacobs (2000a) noted that the pipe apparently collected precipitation infiltrating the northern part of the site as well as the property north of the MFC property. As reported in

the XPA (Jacobs, 2000b), a surface water sample was collected from this pipe. No VOCs or SVOCs were reported above MRLs in surface water samples (Jacobs, 2000b). Several metals were detected in surface water. With the exception of barium, the concentrations of metals in the pipe discharge are below DEQ aquatic biota SLVs and human health water quality criteria for consumption of aquatic organisms (see Table 9). Barium occurs naturally in soil and water of the region, and is likely present at natural levels in site stormwater. Barium is unlikely to cause adverse effects to aquatic organisms exposed to discharges from this pipe.

Discharges from the stormwater pipe and the ponded seep water do not appear to have impacted surface water or groundwater. The pipe appears to drain a relatively small, unimpacted area of the site. Groundwater quality in wells MW-1 and MW-2 does not appear to be impacted by the infiltration of discharges from the stormwater pipe (see Tables 7 and 8).

4.3 Soil Risk Screening Results

The concentrations of benzo(a)pyrene exceeded the sediment bioaccumulation SLV of 100 µg/kg at the following surface soil sample locations: SS-7, SS-12, SS-15, SS-16, SS-17, SS-18, SS-20, and SS-21 (see Table 2). No other PAHs were detected at concentrations above screening levels for the soil-to-sediment pathway. Of the PAHs detected in soil at the site, a DEQ bioaccumulation SLV was available only for benzo(a)pyrene.

With the exception of sample location SS-20, all of the above sample locations are within 100 feet of the shoreline (see Figure 2). The samples with benzo(a)pyrene concentrations above the bioaccumulation SLV are distributed along the entire length of the property. The mean concentration of benzo(a)pyrene from soil samples collected within approximately 100 feet of the riverbank is 164 µg/kg and above the DEQ sediment bioaccumulation SLV (see Table 10).

4.4 Sediment Results

As part of the XPA, Jacobs (2000b) collected four surficial sediment samples in the Willamette River adjacent to the site (SD-2, SD-3, SD-4, and SD-5), one from a location approximately 100 feet upriver of the site (SD-6), and one from sediment in a small upland seep (SD-1). Table 11 is a reproduction of a table in the XPA (Jacobs, 2000b) that presents concentrations of SVOCs in sediment. As shown in Table 3, the concentrations of benzo(a)pyrene in all surface sediment samples were above the DEQ bioaccumulation SLV, including the upriver sample result. It should be noted that the apparent baseline concentration of benzo(a)pyrene in Portland Harbor is 500 µg/kg (USEPA, 1998), so observations of the chemical above the SLV of 100 µg/kg should not be unexpected.

Although there are insufficient data to make strong inferences regarding the source of chemicals detected in sediment, several spatial patterns are inconsistent with what would be expected if upland soil were an important source. For example, sediment samples SD-1 and SD-2 were collected at locations where runoff from the site may have accumulated (Jacobs, 2000b). The concentrations of PAHs, including benzo(a)pyrene, at both of these locations are similar to those observed in both the upriver sediment sample (SD-6) and the sample collected at SD-3 (see Table 11). The concentrations of PAHs at all four of these locations are generally lower than apparent baseline values for Portland Harbor (USEPA, 1998). Because the concentrations of site-related chemicals in sediment where runoff may have accumulated are similar to concentrations in areas where site runoff did not accumulate (i.e., upriver), site runoff does not appear to be an important source of sediment contaminants.

The highest concentrations of contaminants were observed in sediment samples SD-4 and SD-5, collected downstream of the Hendren Tow Boat dock (see Table 11). It seems likely that releases from over-water operations on or near the dock are the sources. For example, concentrations of PAHs in the surface soil samples collected closest to the Hendren tow boat dock (SS-17, SS-18, and SS-2) are not substantially higher than concentrations in soil at other locations near the shore. The lack of correlation between concentrations in upland surface soil and those in sediment suggests that surface runoff is not the primary source of the relatively high contaminant concentrations in sediment samples SD-4 and SD-5.

4.5 Summary

Surface soil with concentrations of benzo(a)pyrene above the DEQ bioaccumulation SLV for sediment appears to be present in a few locations where it could possibly be transported via overland stormwater runoff or erosion to the Willamette River (see Table 12 and Figure 5). Benzo(a)pyrene concentrations in river sediment near the site also are above the bioaccumulation SLV. However, there is no convincing evidence that contaminants in upland soil have migrated to river sediment as a result of stormwater transport in the past. In general, contaminant levels in sediment where runoff is expected to accumulate are similar to levels in upriver sediment. Also, the concentrations of benzo(a)pyrene in soil appear to be much lower than concentrations in sediment adjacent to the site. For example, the maximum detected concentration of benzo(a)pyrene in soil is 692 µg/kg (see Table 2) and is several orders of magnitude lower than the maximum concentration in sediment of 30,000 µg/kg (see Table 11). It is possible that stormwater runoff has contributed contaminants to the river, but the contributions appear to have been small relative to other sources and cannot be clearly identified with available data.

There are known sources of sediment contamination upstream of the site, including GASCO and the US Moorings site. At present, river dynamics that control sediment

deposition and scouring near the site are not completely understood. As a result, it is possible that some contaminants in sediment at the site have migrated from other offsite source locations in the river. Additional in-water investigations are being conducted as part of the Portland Harbor Remedial Investigation/Feasibility Study, and the results of these investigations will better define sediment contamination in the general site area. These additional investigations may better identify potential sources of sediment contamination near the site.

MFA recommends excavation of soil containing concentrations above the source control screening criteria to prevent possible erosion and transport of impacted soil to the river. Also, MFA recommends the installation and quarterly sampling for one year of an engineered stormwater management system at the site. Use of best management practices to manage stormwater runoff will prevent chemicals in soil from migrating to the Willamette River in the future.

5 SOURCE CONTROL MEASURES

5.1 Soil Management Areas

Based on the risk screening and SCE, surface soil with concentrations exceeding the source control criteria requires some form of management to mitigate possible transport of impacted soil to the river. Figure 5 shows the soil management area (SMA) for implementation of source control measures. Impacted soil at and around each sample location will be excavated to prevent possible erosion and transport of impacted soil to the river. Pre-excavation sampling and analyses will be performed to determine the actual vertical and lateral extent of impacted soil to be excavated. Soil sampling procedures are described in Section 6.1.2.

5.2 Source Control Measures

To prevent possible transport of impacted soil to the river, MFA recommends excavating material around sample locations with concentrations that exceed the source control screening criteria (see Figure 5—SS-7, SS-9, SS-12, SS-15 through SS-18, SS-20, and SS-21). Before excavation, the sample locations will be resurveyed and staked by a surveyor licensed in Oregon and samples will be collected and analyzed for copper, lead, and/or PAHs, depending on the location, to determine the actual vertical and horizontal extents of impacted soil.

5.3 Schedule for Implementation

AACP is currently negotiating the sale of the property. The closing date is November 1, 2004. AACP plans to develop the site in the future. Development will include:

- Development of the area north of the St. Johns Bridge within one to three years of the purchase of the property, including:
 - Filling and grading of part of the site east (riverward) of the railroad tracks, subject to balanced cut and fill requirements, beginning in November 2004. Some areas will be capped with a minimum of 2 feet of gravel to raise the surface elevation a minimum of 2 feet above the 100-year floodplain

elevation (i.e., 29.7 feet relative to the COP datum). The current elevation of most of the site east of the railroad tracks is between 24 and 28 feet COP.

- Construction of one or two buildings, with limited paving around these structures.
- Construction of a stormwater management system, with oil-water separators and a possible permitted outfall.
- Development of the area south of the St. Johns Bridge within 5 years of purchase, including:
 - Grading of the site's surface.

MFA recommends that source control measures (i.e., excavation of soil exceeding source control screening criteria shown on Figure 5 and installation and sampling of a stormwater management system) be completed with general earthwork, utility, paving, and building construction during industrial development of the site within the next three years. These activities will be conducted under the permit authority of the COP. The project will acquire all permits normally required by the City for similar projects. The work will also meet the requirements of the PPA. A 1200C erosion control permit also will be obtained from the DEQ.

The above source control measures will mitigate potential risks associated with possible erosion and transport of impacted soil to the river.

6 CONTAMINATED MEDIA MANAGEMENT PLAN

This section summarizes protocols for handling and management of potentially contaminated materials generated during implementation of source control measures. Excavation of soil exceeding source control screening criteria is recommended to mitigate erosion and transport of contaminated soil to the river. Site development also may include excavation for building foundations, utilities, and other infrastructure, and contaminated soil may be encountered during these activities. Although contamination is not expected to be encountered during excavation as part of development, these protocols are included as a precaution.

6.1 Soil

Based on current surface soil data, limited areas of soil are impacted above the source control screening criteria. Figure 5 shows the extent of impacted soil. Soil impacts are limited to copper, lead, and PAHs in surface soil. Based on current subsurface soil data (below 6 feet), soil is not impacted above the RBCs. This section describes the protocols for handling and management of soil during excavation. Excavated soil will be reused on site or stockpiled on site, according to the process described in this section.

6.1.1 Health and Safety Requirements

All soil-handling activities will be conducted with appropriate personal protective equipment. The project Health and Safety Plan (HASP) to be followed for future site earthwork activities is presented in Appendix C of this plan. Dust-minimization activities will be implemented as described in Section 6.4.

6.1.2 Soil Sampling Protocols

Before excavation of soil with concentrations exceeding source control screening criteria, sample locations will be resurveyed and flagged, and the vertical and lateral extent of impacted soil will be determined by collecting and analyzing soil samples for lead (USEPA Method 6010), copper (USEPA Method 6010, and/or PAHs (USEPA Method 8270-SIM), depending on the location. Samples will be collected using manual tools or a direct-push drill (Geoprobe™) rig, depending on the type of subsurface materials.

Samples will be collected and analyzed in a tiered manner. Samples will be collected within 5 feet, 10 feet, and 20 feet of the sample location to determine the lateral extent of impacts. Three samples will be collected around the sample location at each distance. Samples will be collected at ground surface, 1 foot bgs, and 2 feet bgs to determine the vertical extent of impacts. Excavation will not extend below 2 feet bgs because excavation and backfilling with up to 2 feet of clean fill will provide a sufficient cap to prevent erosion or transport of any remaining impacted soil to the river.

Initially, samples collected five feet away from the sample location will be analyzed for COIs. The sample intervals initially analyzed will include ground surface and 1 foot bgs. Samples will be analyzed at an offsite laboratory. If detected concentrations in the samples collected in these samples exceed source control screening criteria, then the deeper samples and samples collected 10 feet away from the sample location will be analyzed. This process will be repeated until the vertical and lateral extents of impacts are delineated.

During excavation for development of the property, representative soil samples will be field-screened for petroleum-like odor, staining, sheen, and residual free product. Sampling and analytical methods are described in Section 7. Based on the results of the field-screening, the earthwork contractor will be directed on stockpile and on-site reuse options. Representative samples of the impacted soil will be collected and analyzed for petroleum hydrocarbons by NWTPH-Gx and -Dx methods for gasoline-, diesel-, and oil-range organics at an offsite laboratory. Detected concentrations will be compared to the DEQ's RBCs for occupational and construction worker exposure to gasoline, diesel, and oil in soil (DEQ, 2003). If detected concentrations exceed the RBCs for petroleum hydrocarbons, samples also will be analyzed for PAHs by USEPA Method 8270C-SIM and for benzene, toluene, ethylbenzene, and xylene (BTEX) by USEPA Method 8020. If soil concentrations exceed the RBCs, the soil will be disposed of off site at the appropriate disposal facility or landfill. If soil concentrations are less than the RBCs, the soil will be reused as fill on the site in areas that are at least 100 feet from the top of the riverbank. Soil will be placed in separate lined and bermed stockpiles adjacent to the excavation, depending on the presence or absence of petroleum-like impacts.

6.1.3 Soil Management Protocols

Source control measures and development of the site may include the following earthwork activities:

- Mobilization of equipment to the site.
- Excavation of soil with concentrations exceeding source control screening criteria.

- Transport of fill material to the site.
- Stockpiling of fill material at the site.
- Placement of fill in the area east of railroad tracks to an elevation of 29.7 feet COP.
- Grading.
- Soil excavation for possible building foundations or utilities, including a stormwater management system.
- Soil stockpiling according to soil quality classification.
- On-site reuse as backfill or off-site disposal of stockpiled soil.
- Construction of building foundations in the area north of the St. Johns Bridge.

Soil containing concentrations above source control screening criteria will be excavated and stockpiled on the site. Excavations will be backfilled with clean fill. Soil will be temporarily stockpiled adjacent to the excavations pending the results of the laboratory analysis. If soil concentrations are less than the PRGs and RBCs protective of human health, the soil will be reused as fill on the site in areas that are greater than 100 feet from the top of the riverbank.

Stockpiled soil will be placed on and completely covered with 10-millimeter plastic sheeting and bermed to prevent dust generation, surface water run-on and runoff, and spreading of possible contamination beyond the stockpile. The plastic sheeting, berms, etc., will be inspected on a regular basis and maintained while the soil stockpile is present. After removal of the soil stockpiles, the soil beneath the underlying plastic sheeting will be inspected, and any remaining stockpiled soil will be scraped, swept, or otherwise removed and properly disposed of.

6.2 Groundwater

6.2.1 General Conditions

The average depth to the water table at the site where development may occur is generally greater than the estimated depth of foundation and sewer line excavations anticipated to be built at the site (i.e., greater than 10 feet bgs). Therefore, groundwater should not be encountered during future construction activities at the site. MFA concluded that on-site groundwater quality does not pose a risk to human health or the environment, based on

current and reasonably anticipated future uses of groundwater (see Sections 3.3.2 and 4 of this report and MFA, 2004).

Six monitoring wells are now present on the site (see Figure 2). No additional groundwater monitoring is proposed at the site. MFA recommends that the wells be abandoned according to Oregon Water Resource Department requirements as construction activities occur in those areas.

6.2.2 Protocols for Handling Groundwater during Construction

During future construction activities, groundwater may be encountered during excavation. The groundwater does not pose a risk to site occupational, construction, or excavation workers, unless free petroleum product is encountered in the excavation. Free petroleum product was not encountered in groundwater during previous investigations. In the unlikely event that free petroleum product is encountered, it must be removed from excavations to allow construction activities to proceed with minimum exposure of the excavation workers to the petroleum. The HASP in Appendix C provides the minimum guidelines for site contractor personnel during activities that include exposure to groundwater.

The following protocols will be followed for the removal and handling of free petroleum product, if encountered. If free product is identified in an excavation, the contractor will attempt to remove it using a temporary recovery system while the excavation is open and construction work is being completed. The intent of the removal of the free product is to protect human health during construction activities; long-term removal of free product, if identified, is beyond the scope of site development activities. The contractor will not be required to use a water recovery system specifically designed for free product removal, but may use any system that allows construction to proceed. Temporary recovery systems may include the use of vacuum trucks, skimming pumps, or total fluid pumps. A determination of the most effective removal method will be made once the product thickness has been established and other construction considerations, such as the time the excavation will be open, are considered. Recovered petroleum product and groundwater will be transferred by the contractor to a temporary on-site storage tank or directly to tanker trucks and transported to a licensed, permitted recycling facility. Shipping manifests documenting this activity would be included in the environmental construction report prepared to document construction activities.

6.3 Stormwater

Surface water run-on and runoff will be controlled with hay bales, silt fencing, and/or plastic sheeting. Run-on and runoff shall be controlled so that contaminated soil or water

does not leave the work area (e.g., excavation, transport routes, and/or soil stockpile areas).

6.4 Dust Control

Dust control measures will be implemented during future construction activities as necessary to reduce dust generation and prevent off-site migration of visible dust. During dry weather, water trucks may be used to sprinkle the access road and other areas that could generate traffic-induced dust. Site construction vehicle speed may also be limited to 10 miles per hour as a dust-control measure. Heavily traveled areas and haul roads may be covered with gravel as necessary.

6.5 Construction Equipment Decontamination

Equipment or vehicles used in the work area (excavators, truck tires, etc.) will be cleaned or washed before leaving the site to prevent migration of soil to public streets. Temporary wheel-wash stations may be used to clean the tires and exteriors of vehicles leaving the site.

6.6 Site Security

Access to the site during future construction will be restricted to authorized subcontractors, utility workers, trucking agencies, and representatives of city and state agencies. A fence will be erected around the site perimeter to discourage unauthorized entry during construction. Access to the site will be limited to designated entryways that will be monitored. Access gates will be secured during off hours.

7 SAMPLING AND ANALYSIS PLAN

7.1 Purpose of Sampling

This Sampling and Analysis Plan (SAP) outlines procedures for the collection and analyses of soil and stormwater samples as part of implementation of source control measures.

Two basic types of soil sampling may occur during implementation of source control measures and future site development. Before excavation as part of source control measures, samples will be collected around locations where soil exceeds source control screening criteria to define the lateral and vertical extents of impacts. In addition, if impacted soil is observed during excavation as part of site development, it may be sampled. Grab samples also may be collected from soil stockpiles. This SAP is designed to classify site soil for reuse or off-site disposal.

After the stormwater system is constructed and permitted, AACP will conduct quarterly stormwater monitoring for metals, PAHs, and TPH for one year (in addition to any permit requirements), at DEQ's request, to evaluate the effectiveness of source control measures. This section also outlines stormwater sampling and analytical procedures.

7.2 Soil Sampling Methods

7.2.1 Grab Samples

Grab samples may be collected from excavations with impacted soil or stockpiles, using hand sampling techniques. A steel hand trowel may be used to obtain samples from the wall of excavations or from the surfaces of stockpiles. A steel shovel or hand auger also may be used to collect grab samples. For excavations deeper than 4 feet, OR-OSHA safety rules will not allow the sampler to enter the excavation to obtain soil samples. In those cases, a backhoe may be used. Where the sample is obtained using a backhoe bucket, the technician should obtain the sample from the center of the backhoe bucket, where the sample is not likely to be mixed with material adhering to the bucket from earlier excavations. Grab samples will be placed directly into laboratory-supplied samples and stored in iced shipping containers.

Equipment used to sample and/or homogenize the soil samples will be cleaned thoroughly, using a laboratory-grade detergent and water solution, and triple-rinsed in tap water prior to initial use and between each sample point.

7.2.2 Field Screening and Sampling

Samples will be field-screened for petroleum hydrocarbons, using visual and olfactory techniques. The soil will be examined for petroleum-like staining, free product, and/or a sheen. Samples also will be screened for volatiles by placing a representative amount of soil in a clean glass jar sealed with tin foil (or equally suitable material) before being capped or in a new zip-lock plastic bag. Samples will then be warmed and agitated before conducting headspace analysis. Headspace analysis for organic vapors will be conducted by carefully piercing the sample jar's seal or the sample's zip-lock plastic bag with a flame ionization detector calibrated to approximately 100 parts per million (ppm) methane, or a photoionization detector calibrated to approximately 100 ppm isobutylene. Headspace readings will be documented on a sample summary sheet. Samples with petroleum-like impacts will be analyzed for petroleum hydrocarbons and possibly underlying constituents, including PAHs and BTEX, as described in Section 7.5.

7.2.3 Stockpile Sampling

The sampling approach is scaled for small (less than or equal to 10 cubic yards [cy]), medium (10 to 300 cy), and large (greater than 300 cy) stockpiles or volumes to be excavated.

MFA recommends that excavated and stockpiled soil **need not be sampled and analyzed**, provided the following conditions are met:

- The soil is comprised of clean backfill, placed as part of development.
- The soil does not contain free product and is not visibly impacted.
- The soil is not from the SMA.
- The soil will not be reused such that it comprises the upper 1 foot of soil within 100 feet of the Willamette River.

Stockpiles containing 10 cubic yards of soil or less

Soil stockpiles containing 10 cy or less will be divided into three equal volumes. A soil sample will be collected from the center point of each volume, and the three discrete

samples will be combined into one composite sample before analysis by the analytical laboratory as described below.

Stockpiles containing 10 to 300 cubic yards of soil

Soil stockpiles containing 10 to 300 cy will be divided into six equal volumes. A soil sample will be collected from the center point of each volume. The discrete soil samples will randomly be divided into two groups of three, and each group will be combined into one composite sample (two composite samples in total). The analytical laboratory will analyze each composite sample as described below.

Stockpiles containing more than 300 cubic yards of material

To sample large stockpiles, the stockpile will be divided into a three-dimensional grid, thus allowing random sampling of a large amount of material. The size of each grid cell will be determined by the size of the stockpile and to allow for a minimum of 25 cells of approximately equal volume. Each cell will be numbered. A random number generator will be used to select eight of the numbered cells from which a sample will be collected. The soil samples will be collected from the approximate center of the cell. Five of the eight samples will be randomly selected and submitted for chemical analysis; the laboratory will be requested to hold the remaining samples pending the results of analyzing the five submitted samples.

7.3 Soil Sample Preparation for Chemical Analysis

Samples for chemical testing will be prepared, handled, and documented as follows:

- Soil-sampling equipment will be decontaminated before it is used at each sampling location.
- Samples will be obtained using stainless-steel spoons, trowels, or other appropriate metal sampling devices.
- Soil that may be analyzed for BTEX will be transferred directly from freshly exposed soil into the appropriate container (using the appropriate sampling device), where it will be firmly packed. The container will be topped off using a stainless-steel spoon or similar decontaminated utensil.
- Samples that will be analyzed for constituents other than BTEX will be obtained using a decontaminated stainless-steel spoon or other hand tool, and placed in a stainless-steel bowl for homogenization or removal of coarse-grained material, if necessary.

- Coarse-grained particles (larger than 0.25 inch) may be removed before the sample is placed in a laboratory-supplied container. The amount of coarse-grained material will be recorded on a field sampling data sheet (FSDS).
- The percentage of coarse-grained material (larger than 0.25 inch) to fine-grained material (smaller than 0.25 inch) will be estimated.
- Soil samples will be transferred directly from the stainless-steel bowl into laboratory-supplied glass jars, using a stainless-steel spoon or similar decontaminated utensil.

Filled sample containers will be labeled, preserved, placed in iced shipping containers with chain-of-custody (COC) documentation, and transported to the contract laboratory.

7.4 Laboratory Analyses for Soil Samples

For excavation related to implementation of source control measures, the following are COIs in soil:

- Benzo[a]pyrene (see Figure 5—samples SS-7, SS-12, SS-15 through SS-18, SS-20, and SS-21)
- Copper (see Figure 5—sample SS-9)
- Lead (see Figure 5—sample SS-21)

For excavation purposes during site development, the following are COIs in soil:

- Petroleum hydrocarbons, including gasoline, diesel, and oil
- BTEX
- PAHs

7.5 Stormwater Sampling Procedures

After the stormwater system is installed and permitted, samples will be collected on a quarterly basis for one year and analyzed for metals, PAHs, and TPH as a requirement of the PPA. Stormwater samples will be collected as follows:

1. Sample containers will be ordered from the contract laboratory. Samples will be analyzed for total arsenic, cadmium, chromium, copper, lead, nickel, and zinc, PAHs, and TPH.

2. Stormwater samples will be collected using a specific collection container dedicated to this purpose. The sample location is assumed to be the future outfall to the river or some form of onsite stormwater management feature (e.g., bioswale).
3. Field notes will be recorded during collection, noting time, location, weather, stormwater characteristics, etc.
4. Sample containers will be filled. Containers with preservative will be carefully filled to avoid losing any preservative.
5. The labels on the sample containers will be completed with the sample ID, date, time, sampler, and requested analyses.
6. Sample containers will be temporarily stored in coolers with ice with appropriate COC documentation and transported to the laboratory.

7.6 Laboratory Test Methods and Reporting Limits

In accordance with the quality assurance/quality control (QA/QC) requirements, the analytical laboratory will perform the analyses of soil and stormwater using SW-846 methods (USEPA, 1986) unless otherwise noted.

Soil samples collected during implementation of source control measures may be analyzed for benzo(a)pyrene by USEPA Method 8270C-SIM, lead by USEPA Method 6010, and/or copper by USEPA Method 6010. Generally, petroleum-like impacted soil samples may be analyzed for one or more of the following: petroleum hydrocarbons by NWTPH-Gx and -Dx for gasoline- and diesel-range organics, respectively; BTEX by USEPA Method 8020; and PAHs by USEPA Method 8270C-SIM.

To permit the evaluation of potential risk to human health and the environment, MRLs for soil samples collected as part of this investigation will be below the following state or federal criteria or standards:

- The sediment PECs for aquatic receptors for samples collected from excavations as part of source control measures (DEQ, 2001).
- The DEQ's RBCs for occupational, construction, and excavation worker direct contact with soil (DEQ, 2003).
- DEQ's RBCs for vapor intrusion into buildings in an occupational setting.

- USEPA Region 9 PRGs for occupational worker direct contact with soil (USEPA, 2002a).

Stormwater samples may be analyzed for metals by USEPA Method 6010/6020, PAHs by USEPA Method 8270C-SIM, and TPH by NWTPH-Gx and -Dx for gasoline- and diesel-range organics. Additional analytes may be specified in the stormwater permit.

7.7 Quality Assurance Samples

QA samples will be collected in the field. Samples may include field equipment rinsate blanks and field duplicates. QA samples will be blind-labeled and preserved as if they were typical samples. QA samples will be clearly identified on the FSDSs. Analytical results from the blanks and duplicates will facilitate data QC checks. Field blank results may indicate possible contamination introduced by field, and field duplicates indicate overall precision in both field and laboratory procedures. Results will be evaluated by applying the PARCC (precision, accuracy, representativeness, comparability, and completeness) criteria, and the evaluation will be discussed in the data validation report.

Duplicate soil and stormwater samples will be collected to assess the precision of sampling and analytical procedures. Duplicate samples will be obtained by alternately filling like sample jars for the two sample sets (original and duplicate). One field duplicate sample will be collected for every ten samples collected.

7.8 Work Documentation

The following information will be recorded on the FSDS for each sample collected:

- Site name
- Sample number
- Sampler's name
- Sample location (well, boring, or sample number)
- Sampling depth
- Sampling date and time
- Sampling method
- Composite or discrete sample
- Sample container size and material
- Sample preservative
- Climatic or other noteworthy conditions (e.g., nearby activities)
- Problems encountered with equipment or methods
- Decontamination methods
- Number of sample bottles filled

- Laboratory used

General field observations will be recorded in a field notebook.

7.9 Sample Containers, Preservation, and Handling

Sample containers will be supplied by the laboratory and will include the appropriate preservatives.

7.9.1 Sample Packaging and Shipping

To ensure that the laboratory has ample time to complete all analyses within holding time requirements, and to reduce the potential for field degradation of samples, the samples will be shipped from the field to the laboratory at a minimum of every two days. Samples will be stored at 4° Celsius (as measured with a thermometer) in iced shipping containers or a refrigerator designated for samples, and then transported to laboratory by courier in iced shipping containers with a custody seal affixed.

7.10 Sample Labeling

Sample container labels will clearly indicate:

- Sample locations
- Sample number
- Depth at which sample was collected
- Date and time of sample collection
- Sampler's initials
- Any pertinent comments such as specifics of filtration or preservation

Labels will be filled out at the time of sampling. Sample labeling information will also be recorded on the FSDS and in a field notebook.

7.11 Sample Custody

Sample custody will be tracked from point of origin through final analysis and disposal using a COC form, which will be filled out with the appropriate sample/analytical information as soon as possible after samples are collected. For purposes of this work, custody will be defined as follows:

- In plain view of an MFA field representative

- Inside a cooler that is in plain view of an MFA field representative
- Inside any locked space such as a cooler, locker, car, or truck to which the MFA field representative has the only available key(s)

The following items will be recorded on the COC form:

- Project name
- Project number
- MFA project manager
- Sampler's name
- Sample number, date and time collected, media, number of bottles submitted
- Requested analyses for each sample
- Shipment method
- Type of data package required (Tier II½ in most cases)
- Turnaround requirements
- Signature, printed name, organization name, date, and time of transfer of all persons having custody of samples
- Additional instructions or considerations that would affect analysis (nonaqueous layers, archiving, etc.)

Persons in possession of the samples will be required to sign and date the COC form whenever samples are transferred between individuals or organizations. The COC form will be included in the shipping containers with the samples, and the containers will be sealed with a laboratory custody seal. The laboratory will implement its in-house custody procedures, which begin when sample custody is transferred to laboratory personnel.

If samples are shipped via air or ground transportation (by a third party), the following custody procedures will be followed. Samples will be packed in shipping containers, and a custody seal will be placed on the container to reduce the potential for tampering. Proper shipping insurance will be requested and the top two copies of the COC form will accompany the samples. The person shipping the samples will retain a third copy of the COC and shipping forms to allow sample tracking. The COC form will accompany the samples from point of origin in the field to the laboratory.

At the laboratory, a designated sample custodian will accept custody of the received samples, and will verify that the COC form matches the samples received. The shipping container or set of containers is given a laboratory identification number, and each sample is assigned a unique sequential identification number, which includes the original shipping container identification number.

7.12 Data Evaluation, Validation, Reduction, and Reporting

The laboratory performing sample analyses will be required to submit analytical data supported by sufficient QA information to permit independent and conclusive determination of data quality. MFA will determine the data quality, using the data validation procedures described in this section.

7.12.1 Laboratory Evaluation

Initial data reduction, evaluation, and reporting at the laboratory will be carried out as described in USEPA manuals for organic and inorganic analyses (1994 and 1999), as appropriate. Additional laboratory data qualifiers may be defined and reported to further explain the laboratory's QC concerns about a particular sample result. All additional data qualifiers will be defined in the laboratory's case narrative reports associated with each case.

7.12.2 MFA Evaluation

7.12.2.1 Validation

After MFA receives the analytical data, the data will be validated. MFA will examine the data for precision, completeness, accuracy, and adherence to standard operating procedures. The laboratory will perform internal QC checks, and MFA will validate laboratory analytical data, as described in the following sections. QC checks will be performed on laboratory information, using the sample log-in reports faxed to MFA after samples are entered into the laboratory information management system. The reports will be assessed early in the process, which will allow QC checks to begin before sample holding times have expired or before errors are incorporated into the laboratory reports.

Validation Procedures. Laboratory analytical data will be reported in a Tier II½ format to facilitate data validation. MFA will review data and assign data qualifiers to sample results, following parts of the USEPA procedures for inorganic data (USEPA, 1994) and organic data (USEPA, 1999).

Data qualifiers are used to classify sample data as to their conformance to QC requirements. The most common qualifiers are listed below:

- A—Acceptable
- J—Estimate, qualitatively correct but quantitatively suspect
- R—Reject, data not suitable for any purpose
- U—Not detected at a specified reporting limit

Poor surrogate, blank contamination, or calibration problems, among other things, can cause the sample data to be qualified. Whenever sample data are qualified, the reasons for the qualification will be stated in the data validation report.

QC criteria not defined in the guidelines for evaluating analytical data are adopted, where appropriate, from the analytical method.

For organic analyses, the following information will be reviewed during data validation:

- Sampling locations and blind sample numbers
- Sampling dates
- Requested analysis
- Laboratory service request number(s)
- COC documentation
- Sample preservation
- Holding times
- Method blanks
- Surrogate recoveries (organic analyses only)
- Matrix spike results (inorganic analyses only)
- Matrix spikes/matrix spike duplicate analyses (organic analyses only)
- Laboratory duplicates (inorganic analyses only)
- Field duplicates (if submitted)
- Laboratory control samples (organic analyses only)
- MRLs above requested levels
- Any additional comments or difficulties reported by the laboratory
- Overall assessment

The results of the data validation review will be summarized for each batch of samples. Data qualifiers will be assigned to sample results on the basis of USEPA guidelines. The data validation reports will summarize the precision and accuracy for the samples. The quality of the analytical data, as defined by precision and accuracy, will be assessed and compared to data quality objectives for the project.

The laboratory will routinely archive raw laboratory data, including initial and continuing calibration data, chromatograms, quantitation reports, blank sheets, and sampling logs, and will provide these data in addition to the deliverables listed above, if requested.

7.12.2.2 Reduction

After data validation and assignment of data qualifiers, if any, the analytical data will be tabulated. The tabulation of analytical and field data, with the appropriate data qualifiers, will be stored in an electronic GIS-Key database. Data may be further reduced and managed using the following computer software applications:

- Excel (spreadsheet)
- Access (database) or geostatistical database
- Word (word processing)
- Surfer (geostatistical contouring)
- Statistical applications using appropriate methods

As an extension of the data evaluation program, data will be reduced to summarize particular data sets. In addition, statistical techniques may be applied to test results. These techniques will help assess the representativeness, comparability, precision, and completeness of the data sets. Reduced data sets will be used in reporting the overall accuracy of the assessment.

7.12.2.3 Reporting

After completion of data collection, validation, and reduction, the data will be used in reports. Copies of the reports will be kept in MFA's main project file, submitted to AACP for review, and then submitted to the DEQ. The original copy of any document that MFA produces will remain in the main project file.

7.13 Decontamination Procedures

All soil sampling equipment and related tools will be decontaminated using the following washing sequence:

- Nonphosphatic detergent and distilled-water wash
- Dilute acid rinse
- Distilled-water rinse
- Dilute reagent-methanol rinse
- Double distilled-water rinse

Soil adhering to samplers will be removed with a brush before decontamination.

8 DEVELOPMENT AND PERMITTING PROCESS

As noted in Section 5.3, AACCP plans to develop the site in the future. The development process requires that construction permits be obtained as listed below.

1. Private property construction permits required from the City Office of Planning and Development Review
 - Excavation and shoring permit
 - Foundation permit
 - Building permit
 - Greenway permit
2. Public infrastructure permits
 - Sanitary and storm sewer permit from City Bureau of Environmental Services
 - Water system permit required from City Water Bureau
3. 1200C erosion control permit required from DEQ

The DEQ may be provided with copies of the above-listed permits before construction.

9 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

The engineering and institutional control plan describes the measures that will be implemented to restrict exposure to soil. The plan covers engineering measures, such as the cap, and institutional control measures, such as deed restrictions.

The **Engineering measures** include:

- **Security fencing.** Security fencing is already in place to prevent public access to the site.
- **Erosion control.** A 1200C erosion control permit will be obtained from the City. The permit conditions are designed to contain soil within the site boundaries during construction activities. Stormwater and dust-control measures that will be implemented during future earthwork activities are described in Sections 6.3 and 6.4, respectively.

The **institutional control measures** include:

- **Contaminated media management plan and SAP.** The protocols for sampling, analyzing, and managing contaminated material are described in Sections 6 and 7.
- **Deed restrictions.** An agreement between AACCP and the DEQ that the site's zoning will remain industrial.

The institutional controls listed above are consistent with the DEQ's approach to numerous facilities throughout Oregon. By implementing the protocols outlined in this SCP, AACCP will protect human health and the environment during construction activities associated with implementation of source control measures and as part of site development.

10 PROJECT CLOSEOUT REPORT

A project closeout report will be prepared after source control measures are implemented so that AACP can obtain a No Further Action determination and Certificate of Completion from the DEQ. After excavation and stormwater sampling are completed, a draft project closeout report will be submitted to the DEQ for review and comment. A final closeout project report addressing the DEQ's comments on the draft report will be submitted for DEQ approval. The report will include the following:

- An environmental construction report describing how the soil management activities conformed to requirements of the SCP.
- Certification of an Oregon-registered professional engineer, or engineering geologist, and AACP's project coordinator that the work was performed in accordance with all approved plans.
- Tables summarizing the analytical data.
- A map showing the location of the excavated areas and the areas where soil was reused as fill.
- Laboratory analytical reports.
- Data QA/QC review.

11 IMPLEMENTATION SCHEDULE

Source control measures will be implemented within three years of the purchase of the property (i.e., by November 2007).

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

REFERENCES

- DEQ. 2001. Guidance for ecological risk assessment: level II screening. Oregon Department of Environmental Quality. December.
- DEQ. 2002. Default background concentrations for metals. Oregon Department of Environmental Quality Memorandum for Project Managers. October 28.
- DEQ. 2003. Risk-based decision making for the remediation of petroleum-contaminated sites. Oregon Department of Environmental Quality. September 22.
- DEQ. 2004. Letter (re screening level risk assessment for soil and groundwater, Marine Finance Property, Portland, Oregon) and attachment (re draft source control evaluation criteria) from M. Pugh, Oregon Department of Environmental Quality, to D. Burch, Advanced American Diving Service, Inc. August 24.
- Ecology. 1994. Natural background soil metals concentrations in Washington State. Washington Department of Ecology Publication No. 94-115.
- GeoDesign. 2003. Phase II environmental site assessment, Marine Finance Corporation, 8444 NW St. Helens Road, Portland, Oregon. Prepared by GeoDesign, Inc. June 16.
- Hinkle, S. R., and D. J. Pollette. 1999. Arsenic in ground water of the Willamette Basin, Oregon. Water Resources Investigations Report 98-4205.
- Ingersoll, C. G., D. D. MacDonald, N. Wang, J. L. Crane, L. J. Field, P. S. Haverland, N. E. Kemble, R. A. Lindscoog, C. Severn, and D. E. Smorong. 2000. Prediction of sediment toxicity using consensus-based freshwater sediment quality guidelines. EPA 905/R-00/007. June.
- Jacobs. 2000a. Preliminary assessment and expanded preliminary assessment work plan, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for Oregon Department of Environmental Quality. July.
- Jacobs. 2000b. Expanded preliminary assessment data report, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for Oregon Department of Environmental Quality. October.

- MacDonald, D., C. Ingersoll, and T. Berger. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Archives of Environmental Contaminant Toxicology* 39:20-31.
- MFA. 2004. Screening-level risk evaluation for soil and groundwater, Marine Finance Corporation Property, Portland, Oregon. Prepared for Advanced American Construction Properties, LLC, by Maul Foster & Alongi, Inc. August 13.
- PBS. 1993. Phase one environmental property assessment report for Riverside Park, Portland, Oregon. Prepared by PBS Environmental.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846. September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).
- USEPA. 1992. Supplemental guidance to RAGS: calculating the concentration term. U.S. Environmental Protection Agency, Publication 9285.7-081. May.
- USEPA. 1994. USEPA contract laboratory program, national functional guidelines for inorganics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA 540/R-94/013. February.
- USEPA. 1998. Portland Harbor sediment investigation report. U.S. Environmental Protection Agency, Region X, Office of Environmental Cleanup, Seattle, Washington. EPA 910/R-98-006.
- USEPA. 1999. USEPA contract laboratory program, national functional guidelines for organics data review. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. EPA540/R-99/008. October.
- USEPA. 2002a. Region 9 preliminary remediation goals. U.S. Environmental Protection Agency. October 1.
- USEPA. 2002b. National recommended water quality criteria: 2002. U.S. Environmental Protection Agency, Office of Water. EPA-822-R-02-047. November.

TABLES

Table Notes

Advanced American Construction Properties

Portland, Oregon

Shaded cells indicate concentrations above screening criteria.

-- = not applicable.

AWQC, fish ingestion = U.S. Environmental Protection Agency, National Recommended Water Quality Criteria: 2002.

B = Element was positively identified and quantitated above the instrument reporting limit, but less than the required reporting limit.

Background = Oregon Department of Environmental Quality Suggested Default Background Concentrations for antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, selenium, and zinc from a DEQ Memorandum dated October 28, 2002. Clark County 90th Percentile Values from Washington Department of Ecology, October 1994, was used for all other metals.

bgs = below ground surface.

DEQ = Oregon Department of Environmental Quality.

DEQ Level II SLVs, aquatic = Oregon Department of Environmental Quality Guidance for Ecological Risk Assessment, December 2001.

DEQ Level II SLVs Sediment—Bioaccumulation = Oregon Department of Environmental Quality Guidance for Ecological Risk Assessment, December 2001.

DEQ RBCss = soil ingestion, dermal contact, and inhalation risk-based concentration from Oregon Department of Environmental Quality Risk-Based Decision Making, Appendix A, September 22, 2003.

HPAH = high molecular weight PAH.

J = estimate, qualitatively correct but quantitatively suspect.

LPAH = low molecular weight PAH.

mg/kg = milligrams per kilogram.

mg/L = milligrams per liter.

µg/kg = micrograms per kilogram.

µg/L = micrograms per liter.

NA = not analyzed.

ND = not detected above laboratory reporting methods.

NV = no value is available.

PAHs = polycyclic aromatic hydrocarbons.

PEC = probable effects concentration.

PRG = preliminary remediation goal.

RBCs = risk-based concentrations.

TPH = total petroleum hydrocarbons.

U = not detected at a specified reporting limit.

USEPA = U.S. Environmental Protection Agency.

VOCs = volatile organic compounds.

*total metals were analyzed for the April 2003 sampling event; dissolved metals were analyzed for the July 2003 and April 2004 sampling events.

^a>Max: The RBC is greater than the maximum amount that would be present if all of the initial air space were filled with petroleum product.

^b>Csat: The soil RBC exceeds the limit of three-phase equilibrium partitioning. Soil concentrations exceeding Csat indicate that free product might be present.

^carsenic cancer endpoint.

^d"CAL-Modified PRG."

^etotal chromium (1:6 ratio Cr VI:Cr III).

^fmethyl mercury.

^gnickel-soluble salts.

^hTotal PAHs concentrations include reporting limits for non-detect analytes.

Table 1
Metals in Surface Soil (0–0.5 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Iron mg/kg
SS-12	8/20/2003	NA	NA	3.77	NA	NA	NA	NA	NA	NA	NA	NA
SS-13	8/20/2003	NA	NA	1.10	NA	NA	NA	NA	NA	NA	NA	NA
SS-14	8/20/2003	NA	NA	4.07	NA	NA	NA	NA	NA	NA	NA	NA
SS-15	8/20/2003	NA	NA	13.4	NA	NA	NA	NA	NA	NA	NA	NA
SS-16	8/20/2003	NA	NA	7.06	NA	NA	NA	NA	NA	NA	NA	NA
SS-17	8/20/2003	NA	NA	2.57	NA	NA	NA	NA	NA	NA	NA	NA
SS-18	8/20/2003	NA	NA	2.77	NA	NA	NA	NA	NA	NA	NA	NA
SS-19	10/15/2003	NA	NA	4.08	NA	NA	NA	NA	NA	NA	NA	NA
SS-20	10/15/2003	NA	NA	3.63	NA	NA	NA	NA	NA	NA	NA	NA
SS-21	10/15/2003	NA	NA	12.3	NA	NA	NA	NA	NA	NA	NA	NA
SS-1	8/11/2000	8,690	6.1 B	3.3	99.7	0.3 B	0.1 U	5,100	15.4	10	26.4	24,300
SS-2	8/11/2000	9,090	8.1 B	7.3	115	0.3 B	0.1 B	5,160	29.7	14.8	45.5	39,100
SS-3	8/11/2000	11,000	5.7 B	3.8	131	0.4 B	0.1 U	4,890	13.4	11.6	28.8	35,800
SS-4	8/11/2000	13,400	7.6 B	5.0	129	0.3 B	0.1 U	5,710	43.5	11	42.1	33,800
SS-5	8/10/2000	8,640	4.23 U	4.1	72.8	0.2 B	0.1 U	6,030	81.3	8.1	52.6	25,800
SS-6	8/10/2000	11,000	7.6 B	8.9	131	0.3 B	0.1 U	4,580	17	9.7	46.0	30,300
SS-7	8/10/2000	NA	0.31	12.1	NA	0.23	0.16	NA	33.3	NA	24.2	NA
SS-8	8/10/2000	5,280	9.6 B	0.9 B	43.9	0.1 B	0.1 U	4,150	8.2	16.3	12.8	38,700
SS-9	8/10/2000	9,890	7.4 B	13.3	137	0.2 B	0.1 U	15,200	28.0	11.1	270	36,200
SS-10	8/10/2000	10,500	4.2 U	2.9	112	0.3 B	0.1 U	4,460	11.6	15.5	19.2	22,600
SS-11	8/10/2000	10,900	7.6 B	7.6	113	0.3 B	0.5 B	5,120	22.7	11.7	48.2	29,200
Median				4.1								
Mean				5.9								
Screening Criteria												
Background		52,300	4	7	NV	2	1	NV	42	NV	36	36,100
USEPA Region 9 PRGs (Industrial)		100,000	410	1.6	67,000	1,900	7.4 ^d	NV	450 ^e	1,900	41,000	100,000
Reliable Consensus-Based PEC		NV	NV	33	NV	NV	5	NV	111	NV	149	NV

Table 1
Metals in Surface Soil (0–0.5 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Mercury mg/kg	Nickel mg/kg	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
SS-12	8/20/2003	42.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-13	8/20/2003	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-14	8/20/2003	21.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-15	8/20/2003	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-16	8/20/2003	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-17	8/20/2003	21.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-18	8/20/2003	34.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-19	10/15/2003	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-20	10/15/2003	26.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-21	10/15/2003	136	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-1	8/11/2000	31.3	3,730	459	0.03	12.3	677	0.5 U	0.8 U	268	0.2 U	70.6	76.6
SS-2	8/11/2000	90.7	2,580	621	0.03	17.8	576	1.0 B	0.8 U	263	0.2 U	96.7	194
SS-3	8/11/2000	47.9	3,220	547	0.03	14.6	880	0.5 U	0.8 U	320	0.2 U	92.0	98.5
SS-4	8/11/2000	51.7	6,650	507	0.04	27.5	805	0.5 U	0.8 U	583	0.2 U	79.6	184
SS-5	8/10/2000	35.1	2,880	708	0.03	31.6	621	0.5 U	0.8 U	377	0.2 U	63.6	82.3
SS-6	8/10/2000	37.8	3,280	425	0.02	15	781	0.5 U	0.8 U	376	0.2 U	82.7	172
SS-7	8/10/2000	21.2	NA	NA	0.02 B	18.5	NA	1.0 U	0.0	NA	0.07	NA	81.5
SS-8	8/10/2000	11.3 B	1,470	470	0.01 U	7.7	545	0.5 U	0.8 U	282	0.2 U	134	60.6
SS-9	8/10/2000	56	3,810	543	0.04	16.9	856	0.5 U	0.8 U	456	0.2 U	68	458
SS-10	8/10/2000	15.5	3,560	481	0.03	13.8	563	0.9 B	0.8 U	316	0.2 U	80.4	66
SS-11	8/10/2000	70.5	3,080	430	0.09	31.8	716	0.5 U	0.8 U	506	0.2 U	91.9	219
Median													
Mean													
Screening Criteria													
Background		17	NV	1,500	0.07	38	NV	2	1	NV	NV	NV	86
USEPA Region 9 PRGs (Industrial)		750	NV	19,000	62 ^f	20,000 ^g	NV	5,100	5,100	NV	67	7,200	100,000
Reliable Consensus-Based PEC		128	NV	NV	NV	49	NV	NV	NV	NV	NV	NV	459

Table 2
TPH, PAHs, and VOCs in Surface Soil (0–0.5 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Total Petroleum Hydrocarbons by NWTPH-Dx		PAHs by EPA Method 8270-SIM					
		Diesel-Range mg/kg	Heavy Oil-Range mg/kg	Acenaphthene ug/kg	2-Methylnaphthalene ug/kg	Acenaphthylene ug/kg	Anthracene ug/kg	Benzo(a)-anthracene ug/kg	Benzo(a)-pyrene ug/kg
SS-1	8/11/2000	35	98 U	ND	ND	ND	ND	ND	0.32 U
SS-2	8/11/2000	84	250	ND	ND	ND	ND	0.65	0.91
SS-3	8/10/2000	230	260	ND	ND	ND	ND	ND	0.32 U
SS-4	8/10/2000	220	110	NA	NA	NA	NA	NA	NA
SS-5	8/10/2000	28	110	ND	ND	ND	ND	ND	0.31 U
SS-6	08/10/00	1,400	9,800	ND	ND	ND	ND	ND	0.33 U
SS-7	08/09/00	62	380	110	3 J	3 J	100 J	620	470
SS-8	8/10/2000	26 U	100 U	ND	ND	ND	ND	ND	0.33 U
SS-9	08/10/00	NA	NA	ND	ND	ND	ND	0.59	0.79
SS-10	8/10/2000	NA	NA	ND	ND	ND	ND	ND	0.33 U
SS-11	08/10/00	NA	NA	ND	ND	ND	ND	ND	0.33 U
SS-12	08/20/03	500 U	1,170	268 U	ND	268 U	268 U	268 U	330
SS-13	08/20/03	25 U	50 U	13.4 U	ND	13.4 U	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	51	66.4	26.8 U	ND	26.8 U	26.8 U	46.3	66.3
SS-15	08/20/03	25 U	50 U	64.3	ND	26.8 U	26.8	147	171
SS-16	08/20/03	34	164	70.9	ND	36	35.6	223	361
SS-17	08/20/03	25 U	50 U	57.4	ND	13.4 U	20.8	171	244
SS-18	08/20/03	25 U	50 U	42	ND	26.8 U	26.8 U	97.4	129
SS-19	10/15/03	25 U	50 U	35.1	ND	13.4 U	13.4 U	19.9	18.6
SS-20	10/15/03	25 U	50 U	23.7	ND	13.4 U	17.2	102	141
SS-21	10/15/03	32.3	142	48.3	ND	44.5	76.2	516	692
Mean		158.5	719.5	69.1	3.0	44.1	56.8	171.2	132.0
Screening Criteria									
DEQ RBCss—Occupational		70,000	NV	41,000,000 ^b	NV	NV	— ^a	2,700	270
DEQ RBCss—Construction Worker		23,000	NV	16,000,000 ^b	NV	NV	90,000,000 ^b	21,000 ^b	2,100
DEQ RBCss—Excavation Worker		— ^a	NV	— ^a	NV	NV	— ^a	590,000 ^b	59,000 ^b
USEPA Region 9 PRGs (Industrial)									
Reliable Consensus-Based PEC		NV	NV	NV	NV	NV	NV	1,050	1,450
DEQ Level II SLV Sediment		NV	NV	NV	NV	NV	NV	NV	100
—Bioaccumulation									

Table 2
TPH, PAHs, and VOCs in Surface Soil (0–0.5 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM				
		Benzo(b)-fluoranthene ug/kg	Benzo(ghi)-perylene ug/kg	Benzo(k)-fluoranthene ug/kg	Chrysene ug/kg	Dibenz(a,h)-anthracene ug/kg
SS-1	8/11/2000	ND	ND	ND	ND	ND
SS-2	8/11/2000	0.87	0.78	0.79	0.89	ND
SS-3	8/10/2000	ND	ND	ND	ND	ND
SS-4	8/10/2000	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	ND	ND
SS-6	08/10/00	ND	ND	ND	ND	ND
SS-7	08/09/00	520	290	220	ND	66
SS-8	8/10/2000	ND	ND	ND	ND	ND
SS-9	08/10/00	1.10	0.54	0.92	0.83	ND
SS-10	8/10/2000	ND	ND	ND	ND	ND
SS-11	08/10/00	0.34	ND	ND	0.35	ND
SS-12	08/20/03	303	381	277	281	268
SS-13	08/20/03	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	81.1	103	40.1	65.9	26.8 U
SS-15	08/20/03	181	146	147	190	45.6
SS-16	08/20/03	297	472	253	274	79
SS-17	08/20/03	254	219	192	201	56.2
SS-18	08/20/03	165	131	96.3	124	31.9
SS-19	10/15/03	17	13.4 U	18.3	22.1	13.4 U
SS-20	10/15/03	120	124	130	153	25.5
SS-21	10/15/03	541	583	541	631	117
Mean		178.2	190.5	148.4	150.6	67.5
Screening Criteria						
DEQ RBCss–Occupational		2,700	NV	27,000 ^b	270,000 ^b	270
DEQ RBCss–Construction Worker		21,000 ^b	NV	210,000 ^b	2,100,000 ^b	2,100
DEQ RBCss–Excavation Worker		590,000 ^b	NV	5,900,000 ^b	59,000,000 ^b	59,000 ^b
USEPA Region 9 PRGs (Industrial)						
Reliable Consensus-Based PEC		NV	NV	NV	1,290	NV
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	NV	NV

Table 2
TPH, PAHs, and VOCs in Surface Soil (0–0.5 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM				
		Dimethyl-naphthalene ug/kg	Fluoranthene ug/kg	Fluorene ug/kg	Indeno(1,2,3-cd)-pyrene ug/kg	Naphthalene ug/kg
SS-1	8/11/2000	ND	ND	ND	ND	ND
SS-2	8/11/2000	ND	1.4	ND	0.68	ND
SS-3	8/10/2000	ND	ND	ND	ND	ND
SS-4	8/10/2000	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	ND	ND
SS-6	08/10/00	ND	ND	ND	ND	ND
SS-7	08/09/00	0.70 J	840 J	44	390	3 J
SS-8	8/10/2000	ND	0.44	ND	ND	ND
SS-9	08/10/00	ND	1.30	ND	0.64	ND
SS-10	8/10/2000	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.59	ND	ND	ND
SS-12	08/20/03	ND	337	268	282	268 U
SS-13	08/20/03	ND	13.4 U	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	ND	89.4	26.8 U	70.3	26.8 U
SS-15	08/20/03	ND	323	57.5	127	63.3
SS-16	08/20/03	ND	369	51	337	26.8 U
SS-17	08/20/03	ND	271	39	181	13.4 U
SS-18	08/20/03	ND	165	30.4	108	26.8 U
SS-19	10/15/03	ND	48.4	34.4	13.4 U	13.4 U
SS-20	10/15/03	ND	156	14.3	102	13.4 U
SS-21	10/15/03	ND	957	47.7	466	33.5 U
Mean		0.7	238.2	57.0	160.9	45.6
Screening Criteria						
DEQ RBCss—Occupational		NV	29,000,000 ^b	35,000,000 ^b	2,700	770,000 ^b
DEQ RBCss—Construction Worker		NV	8,900,000 ^b	12,000,000 ^b	21,000 ^b	710,000 ^b
DEQ RBCss—Excavation Worker		NV	— ^a	— ^a	590,000 ^b	20,000,000 ^b
USEPA Region 9 PRGs (Industrial)						
Reliable Consensus-Based PEC		NV	NV	NV	NV	561
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	NV	NV

Table 2
TPH, PAHs, and VOCs in Surface Soil (0–0.5 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM			VOCs by EPA Method 8260B	
		Phenanthrene ug/kg	Pyrene ug/kg	Total PAHs ^h ug/kg	Acetone ug/kg	Trichloro- fluoromethane ug/kg
SS-1	8/11/2000	ND	ND	ND	ND	ND
SS-2	8/11/2000	0.67	ND	7.64	ND	ND
SS-3	8/10/2000	ND	ND	ND	NA	NA
SS-4	8/10/2000	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	NA	NA
SS-6	08/10/00	ND	0.65	0.65	66	ND
SS-7	08/09/00	490 J	830 J	4,999	ND	ND
SS-8	8/10/2000	ND	ND	0.44	ND	ND
SS-9	08/10/00	0.52	0.9	8.13	ND	10
SS-10	8/10/2000	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.47	1.75	NA	NA
SS-12	08/20/03	268	391	4,726	NA	NA
SS-13	08/20/03	13.4 U	13.4 U	214.4 U	NA	NA
SS-14	08/20/03	56.6	94.8	874.6	NA	NA
SS-15	08/20/03	250	323	2,289.3	NA	NA
SS-16	08/20/03	132	497	3,514.3	NA	NA
SS-17	08/20/03	134	295	2,362.2	NA	NA
SS-18	08/20/03	84.6	177	1,462	NA	NA
SS-19	10/15/03	29.5	43.7	367.5	NA	NA
SS-20	10/15/03	60.2	172	1,367.7	NA	NA
SS-21	10/15/03	476	1,180	6,950.2	NA	NA
Mean		153.5	287.1	1,821.6	66.0	10.0
Screening Criteria						
DEQ RBCss—Occupational		NV	21,000,000 ^b	NV	NV	NV
DEQ RBCss—Construction Worker		NV	6,700,000 ^b	NV	NV	NV
DEQ RBCss—Excavation Worker		NV	— ^a	NV	NV	NV
USEPA Region 9 PRGs (Industrial)					6,000,000	2,000,000
Reliable Consensus-Based PEC		1,170	1,520	22,280	NV	NV
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	290	NV

Table 3
Butyltins in Surface Soil (0–0.5 bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Tetra-n-butyltin ug/kg		Tri-n-butyltin Cation ug/kg		Di-n-butyltin Cation ug/kg		n-butyltin Cation ug/kg	
SS-1	8/11/2004	3	U	8		2		3	
SS-2	8/11/2004	3	U	120		15		12	
SS-7	8/9/2004	3	U	0.5	J	0.4	J	1	U
SS-9	8/10/2004	3	U	110		29		27	
SS-10	8/11/2004	3	U	2		0.5	J	1	U
Screening Criteria									
USEPA Region 9 PRGs (Industrial)		NV		180,000		NV		NV	
Portland Harbor Apparent Baseline Concentration		NV		300		NV		NV	
DEQ Level II SLV Sediment —Bioaccumulation		NV		190		NV		NV	

Table 4
Metals in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg
B-1 (8-10)	03/24/03	8-10	NA	0.5 U	2.42	NA	0.38	0.37 U	NA	13.2
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	8.99	2.27	NA	0.38	5.39	NA	16.4
MW-1 (8-9)	03/21/03	8-9	NA	0.5 U	1.66	NA	0.74	1.95 U	NA	22.9
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	0.31 U	2.31	NA	0.43 U	0.43 U	NA	14.2
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	0.33 U	2.91	NA	0.4 U	0.4 U	NA	13.2
MW-4 (18-19)	03/21/03	18-19	NA	0.35 U	2.67	NA	0.3	0.29 U	NA	11.3
MW-5 (22-23)	03/21/03	22-23	NA	0.4 U	1.76	NA	0.39 U	0.39 U	NA	19.2
MW-6 (13-15)	03/21/03	13-15	NA	0.33 U	1.97	NA	0.41 U	0.41 U	NA	15.9
SB-1	8/11/2000	6-8	12,500	4.2 U	3.1	111	0.3 B	0.1 U	4,420	15.6
SB-2	8/11/2000	14-16	9,470	4.39 U	3.2	74.6	0.3 B	0.1 U	3,890	11.7
SB-5	8/11/2000	18-19	10,300	4.58 U	3.3	86.6	0.3 B	0.1 U	4,100	13.6
Screening Criteria										
Background			52,300	4	7	NV	2	1	NV	42
USEPA Region 9 PRGs (Industrial)			100,000	410	1.6 ^c	67,000	1,900	7.4 ^d	NV	450 ^e

Table 4
Metals in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	Cobalt mg/kg	Copper mg/kg	Iron mg/kg	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Mercury mg/kg	Nickel mg/kg
B-1 (8-10)	03/24/03	8-10	NA	15.9	NA	4.73	NA	NA	0.1 U	17.9
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	17.1	NA	5.82	NA	NA	0.09 U	18.5
MW-1 (8-9)	03/21/03	8-9	NA	18.3	NA	10.5	NA	NA	0.1 U	13.6
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	35.7	NA	4.04	NA	NA	0.09 U	16.9
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	16.8	NA	2.24	NA	NA	0.09 U	17
MW-4 (18-19)	03/21/03	18-19	NA	17.5	NA	7.78	NA	NA	0.18	15.7
MW-5 (22-23)	03/21/03	22-23	NA	20	NA	5.92	NA	NA	0.1 U	23.4
MW-6 (13-15)	03/21/03	13-15	NA	18.6	NA	11.1	NA	NA	0.09 U	21.3
SB-1	8/11/2000	6-8	13.4	15.7	24,200	12.7 B	4,370	316	0.11	20
SB-2	8/11/2000	14-16	12.8	13.1	22,100	3 B	3,500	273	0.01 U	16.4
SB-5	8/11/2000	18-19	12.6	20.1	22,900	19 B	3,460	386	0.1	17.1
Screening Criteria										
Background			NV	36	36,100	17	NV	1,500	0.07	38
USEPA Region 9 PRGs (Industrial)			1,900	41,000	100,000	750	NV	19,000	62 ^f	20,000 ^g

Table 4
Metals in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (ft)	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
B-1 (8-10)	03/24/03	8-10	NA	0.37 U	0.50 U	NA	0.5 U	NA	62.8
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	0.31 U	0.36 U	NA	0.36 U	NA	92.4
MW-1 (8-9)	03/21/03	8-9	NA	0.32 U	0.50 U	NA	0.5 U	NA	55.8
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	0.43 U	0.31 U	NA	0.31 U	NA	63.6
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	0.4 U	0.33 U	NA	0.33 U	NA	51
MW-4 (18-19)	03/21/03	18-19	NA	0.29 U	0.35 U	NA	0.35 U	NA	52.8
MW-5 (22-23)	03/21/03	22-23	NA	0.39 U	0.40 U	NA	0.4 U	NA	58.2
MW-6 (13-15)	03/21/03	13-15	NA	0.41 U	0.33 U	NA	0.33 U	NA	52.8
SB-1	8/11/2000	6-8	522	1.1 B	0.8 U	437	0.2 U	65.2	56.5
SB-2	8/11/2000	14-16	521	0.2 U	0.9 U	293	0.2 U	56.5	46.5
SB-5	8/11/2000	18-19	565	1.2 B	0.9 U	304	0.20 U	60.4	80.1
Screening Criteria									
Background			NV	2	1	NV	NV	NV	86
USEPA Region 9 PRGs (Industrial)			NV	5,100	5,100	NV	67	7,200	100,000

Table 4
Metals in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (feet)	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg
B-1 (8-10)	03/24/03	8-10	NA	0.5 U	2.42	NA	0.38	0.37 U	NA	13.2
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	8.99	2.27	NA	0.38	5.39	NA	16.4
MW-1 (8-9)	03/21/03	8-9	NA	0.5 U	1.66	NA	0.74	1.95 U	NA	22.9
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	0.31 U	2.31	NA	0.43 U	0.43 U	NA	14.2
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	0.33 U	2.91	NA	0.4 U	0.4 U	NA	13.2
MW-4 (18-19)	03/21/03	18-19	NA	0.35 U	2.67	NA	0.3	0.29 U	NA	11.3
MW-5 (22-23)	03/21/03	22-23	NA	0.4 U	1.76	NA	0.39 U	0.39 U	NA	19.2
MW-6 (13-15)	03/21/03	13-15	NA	0.33 U	1.97	NA	0.41 U	0.41 U	NA	15.9
SB-1	8/11/2000	6-8	12,500	4.2 U	3.1	111	0.3 B	0.1 U	4,420	15.6
SB-2	8/11/2000	14-16	9,470	4.39 U	3.2	74.6	0.3 B	0.1 U	3,890	11.7
SB-5	8/11/2000	18-19	10,300	4.58 U	3.3	86.6	0.3 B	0.1 U	4,100	13.6
Screening Criteria										
Background			52,300	4	7	NV	2	1	NV	42
USEPA Region 9 PRGs (Industrial)			100,000	410	1.6 ^c	67,000	1,900	7.4 ^d	NV	450 ^e

Table 4
Metals in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (feet)	Cobalt mg/kg	Copper mg/kg	Iron mg/kg	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Mercury mg/kg	Nickel mg/kg
B-1 (8-10)	03/24/03	8-10	NA	15.9	NA	4.73	NA	NA	0.1 U	17.9
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	17.1	NA	5.82	NA	NA	0.09 U	18.5
MW-1 (8-9)	03/21/03	8-9	NA	18.3	NA	10.5	NA	NA	0.1 U	13.6
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	35.7	NA	4.04	NA	NA	0.09 U	16.9
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	16.8	NA	2.24	NA	NA	0.09 U	17
MW-4 (18-19)	03/21/03	18-19	NA	17.5	NA	7.78	NA	NA	0.18	15.7
MW-5 (22-23)	03/21/03	22-23	NA	20	NA	5.92	NA	NA	0.1 U	23.4
MW-6 (13-15)	03/21/03	13-15	NA	18.6	NA	11.1	NA	NA	0.09 U	21.3
SB-1	8/11/2000	6-8	13.4	15.7	24,200	12.7 B	4,370	316	0.11	20
SB-2	8/11/2000	14-16	12.8	13.1	22,100	3 B	3,500	273	0.01 U	16.4
SB-5	8/11/2000	18-19	12.6	20.1	22,900	19 B	3,460	386	0.1	17.1
Screening Criteria										
Background			NV	36	36,100	17	NV	1,500	0.07	38
USEPA Region 9 PRGs (Industrial)			1,900	41,000	100,000	750	NV	19,000	62 ^f	20,000 ^g

Table 4
Metals in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (feet)	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
B-1 (8-10)	03/24/03	8-10	NA	0.37 U	0.50 U	NA	0.5 U	NA	62.8
B-1 (17-18)	03/24/03	17-18	NA	NA	NA	NA	NA	NA	NA
B-2 (7-9)	03/24/03	7-9	NA	0.31 U	0.36 U	NA	0.36 U	NA	92.4
MW-1 (8-9)	03/21/03	8-9	NA	0.32 U	0.50 U	NA	0.5 U	NA	55.8
MW-1 (14-15)	03/21/03	8-9	NA	NA	NA	NA	NA	NA	NA
MW-2 (18-20)	03/21/03	18-20	NA	0.43 U	0.31 U	NA	0.31 U	NA	63.6
MW-2 (23-25)	03/21/03	18-20	NA	NA	NA	NA	NA	NA	NA
MW-3 (19-20)	03/21/03	19-20	NA	0.4 U	0.33 U	NA	0.33 U	NA	51
MW-4 (18-19)	03/21/03	18-19	NA	0.29 U	0.35 U	NA	0.35 U	NA	52.8
MW-5 (22-23)	03/21/03	22-23	NA	0.39 U	0.40 U	NA	0.4 U	NA	58.2
MW-6 (13-15)	03/21/03	13-15	NA	0.41 U	0.33 U	NA	0.33 U	NA	52.8
SB-1	8/11/2000	6-8	522	1.1 B	0.8 U	437	0.2 U	65.2	56.5
SB-2	8/11/2000	14-16	521	0.2 U	0.9 U	293	0.2 U	56.5	46.5
SB-5	8/11/2000	18-19	565	1.2 B	0.9 U	304	0.20 U	60.4	80.1
Screening Criteria									
Background			NV	2	1	NV	NV	NV	86
USEPA Region 9 PRGs (Industrial)			NV	5,100	5,100	NV	67	7,200	100,000

Table 5
TPH, PAHs, and VOCs in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (feet)	NWTPH-Dx Method		PAHs by USEPA Method 8270SIM					
			Diesel-Range Hydrocarbons mg/kg	Heavy-Oil-Range Hydrocarbons mg/kg	Acenaphthene ug/kg	Benzo(a)-anthracene ug/kg	Benzo(a)-pyrene ug/kg	Benzo(b)-fluoranthene ug/kg	Benzo(ghi)-perylene ug/kg	
B-1	03/26/03	8-10	25 U	50 U	45.3	104	114	72.8	91.6	
B-1	03/26/03	17-18	25 U	50 U	40.2 U	20.4	17.1	18.5	18.6	
B-2	03/24/03	7-9	25 U	50 U	26.8 U	111	138	82.6	117	
MW-1	03/21/03	8-9	25 U	57.6	13.4 U	24.8	29.5	21.9	26.2	
MW-1	03/21/03	14-15	25 U	50 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-2	03/21/03	18-20	25 U	50 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-2	03/21/03	23-25	25 U	50 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-3	03/21/03	19-20	NA	NA	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	
MW-4	03/21/03	18-19	31	66.1	15.9	43.4	59.7	35.5	62.6	
MW-5	03/21/03	22-23	NA	NA	13.4 U	35.4	57.9	32.4	57.9	
MW-6	03/21/03	13-15	NA	NA	26.8 U	70.2	124	85.2	149	
SB-1	8/11/2000	6-8	26 U	110 U	ND	ND	ND	ND	ND	
SB-2	8/11/2000	14-16	27	100 U	ND	ND	ND	ND	ND	
SB-3	8/10/2000	18-20	27 U	110 U	ND	ND	ND	ND	ND	
SB-4	8/10/2000	20-21	490	1,100	ND	ND	ND	ND	ND	
SB-5	8/11/2000	18-19	91	260	ND	ND	ND	ND	ND	
Screening Criteria										
DEQ RBCss—Construction Worker			23,000	NV	16,000,000 ^b	21,000 ^b	2,100	21,000 ^b	NV	
DEQ RBCss—Excavation Worker			-- ^a	NV	-- ^a	590,000 ^b	59,000 ^b	590,000 ^b	NV	
USEPA Region 9 PRGs (Industrial)										

Table 5
TPH, PAHs, and VOCs in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (feet)	PAHs by USEPA Method 8270SIM								VOCs by USEPA Method 8260B	
			Benzo(k)-fluoranthene ug/kg	Chrysene ug/kg	Fluoranthene ug/kg	Fluorene ug/kg	Indeno(1,2,3-cd)-pyrene ug/kg	Phenanthrene ug/kg	Pyrene ug/kg	2-Chlorotoluene ug/kg		
B-1	03/26/03	8-10	71.2	139	310	26.8	U	66.9	144	327	NA	
B-1	03/26/03	17-18	13.4	U	24.6	76	14.2	13.4	U	83	72.8	
B-2	03/24/03	7-9	89.9	139	254	26.8	U	82.3	26.8	U	293	
MW-1	03/21/03	8-9	18.8	32.5	49.2	13.4	U	19.2	42.8	61.6	NA	
MW-1	03/21/03	14-15	13.4	U	13.4	U	13.4	U	13.4	U	13.4	
MW-2	03/21/03	18-20	13.4	U	13.4	U	13.4	U	13.4	U	13.4	
MW-2	03/21/03	23-25	13.4	U	13.4	U	13.4	U	13.4	U	13.4	
MW-3	03/21/03	19-20	13.4	U	13.4	U	13.4	U	13.4	U	13.4	
MW-4	03/21/03	18-19	41.5	55.6	51.5	14.3	43.2	27	102	NA	NA	
MW-5	03/21/03	22-23	34.8	47.3	88.8	13.4	U	38.8	38.6	137	NA	
MW-6	03/21/03	13-15	71.4	98.5	137	26.8	U	100	60.7	169	100	
SB-1	8/11/2000	6-8	ND	ND	ND	ND	ND	ND	ND	0.36	NA	
SB-2	8/11/2000	14-16	ND	ND	ND	ND	ND	ND	ND	ND	NA	
SB-3	8/10/2000	18-20	ND	ND	ND	ND	ND	ND	ND	ND	NA	
SB-4	8/10/2000	20-21	ND	ND	ND	ND	ND	ND	ND	ND	NA	
SB-5	8/11/2000	18-19	ND	ND	ND	ND	ND	ND	ND	ND	NA	
Screening Criteria												
DEQ RBCss—Construction Worker			210,000 ^b	2,100,000 ^b	8,900,000 ^b	12,000,000 ^b	21,000 ^b	NV	6,700,000 ^b	NV		
DEQ RBCss—Excavation Worker			5,900,000 ^b	59,000,000 ^b	-- ^a	-- ^a	590,000 ^b	NV	-- ^a	NV		
USEPA Region 9 PRGs (Industrial)										560,000		

Table 6
Butyltins in Subsurface Soil (greater than 6 feet bgs)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Sample Depth (feet)	Tetra-n-butyltin ug/kg	Tri-n-butyltin Cation ug/kg	Di-n-butyltin Cation ug/kg	n-butyltin Cation ug/kg
SB-5	8/11/2000	18-19	3 U	1 U	8	2
Screening Levels						
DEQ RBCss—Construction Worker			NV	NV	NV	NV
DEQ RBCss—Excavation Worker			NV	NV	NV	NV
PRG—Industrial			NV	180,000	NV	NV

Table 7
Total/Dissolved Metals* in Groundwater (mg/L)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Sample Date	Antimony mg/L	Arsenic mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L
MW-1	04/15/03	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/22/03	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-2	04/15/03	0.001 U	0.00139	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/22/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-3	04/15/03	0.001 U	0.0012	0.001 U	0.001 U	0.00183	0.00218	0.00117
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00105	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-4	04/15/03	0.00101	0.0195	0.00357	0.00202	0.182	0.43500	0.692
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00123	0.00200 U	0.001 U
	04/01/04	0.001 U	0.0051	0.001 U	0.001 U	0.001 U	0.00200 U	0.001 U
MW-5	04/15/03	0.001 U	0.00286	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00114	0.002 U	0.001 U
	04/01/04	0.001 U	0.00159	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-6	04/15/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00227	0.00173
	07/22/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.002 U	0.001 U
Screening Criteria								
USEPA PRG for Ingestion or Inhalation of Tap Water		0.015	0.000045	0.073	0.018	0.11 (VI)	1.5	NV
DEQ Level II SLVs, aquatic		1.6	0.15	0.0053	0.0022	0.011 (VI) 0.074 (III)	0.009	0.0025
AWQC, fish ingestion		0.64	0.00014	NV	NV	NV	NV	NV

Table 7
Total/Dissolved Metals* in Groundwater (mg/L)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Sample Date	Mercury mg/L	Nickel mg/L	Selenium mg/L	Silver mg/L	Thallium mg/L	Zinc mg/L
MW-1	04/15/03	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
	07/22/03	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-2	04/15/03	0.0002 U	0.002 U	0.001 U	0.00138	0.001 U	0.005 U
	07/22/03	0.0002 U	0.002 U	0.00123	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-3	04/15/03	0.0002 U	0.00413	0.001 U	0.001 U	0.001 U	0.00774
	07/24/03	0.0002 U	0.002 U	0.00171	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.00821
MW-4	04/15/03	0.000973	0.139	0.00103	0.01490	0.001 U	0.63500
	07/24/03	0.000200 U	0.002 U	0.00329	0.00100 U	0.001 U	0.00500 U
	04/01/04	0.000200 U	0.002 U	0.00161	0.00100 U	0.001 U	0.00500 U
MW-5	04/15/03	0.0002 U	0.002 U	0.00119	0.001 U	0.001 U	0.005 U
	07/24/03	0.0002 U	0.002 U	0.00168	0.001 U	0.001 U	0.00758
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-6	04/15/03	0.0002 U	0.00303	0.001 U	0.001 U	0.001 U	0.005 U
	07/22/03	0.0002 U	0.0031	0.00105	0.001 U	0.001 U	0.00683
	04/01/04	0.0002 U	0.00399	0.001 U	0.001 U	0.001 U	0.005 U
Screening Criteria							
USEPA PRG for Ingestion or Inhalation of Tap Water		0.0036	0.73	0.18	0.18	0.0024	11
DEQ Level II SLVs, aquatic		0.00077 (elemental; total)	0.052	0.005	0.00012	0.04	0.12
AWQC, fish ingestion		0.0003 (methyl)	4.6	4.2	NV	0.00047	26

Table 8
PAHs in Groundwater (ug/L)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Acenaphthene ug/L	Benzo (ghi) perylene ug/L	Chrysene ug/L	Fluoranthene ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L	Others ug/L
MW-1	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
MW-2	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
MW-3	04/15/03	0.490	0.1 U	0.1 U	0.795	0.1 U	0.1 U	0.117	1.11	ND
	07/24/03	1.060	0.1 U	0.1 U	1.02	0.157	0.1 U	1.400	1.48	ND
	04/01/04	0.136	0.1 U	0.1 U	0.188	0.1 U	0.1 U	0.100 U	0.293	ND
MW-4	04/15/03	0.808	0.100	0.113	0.168	0.1 U	0.135	0.134	0.649	ND
	07/24/03	1.14	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.274	ND
	04/01/04	0.675	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.178	ND
MW-5	04/15/03	0.196	0.1 U	0.1 U	0.134	0.1 U	0.1 U	0.277	0.666	ND
	07/24/03	0.725	0.1 U	0.1 U	0.269	0.1 U	0.1 U	0.693	1.03	ND
	04/01/04	0.189	0.1 U	0.1 U	0.142	0.1 U	0.1 U	0.109	0.751	ND
MW-6	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.402	0.1 U	0.1 U	0.103	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
Screening Criteria										
USEPA PRG for Ingestion and Inhalation of Groundwater		370	NV	9.200	1,500	240	6.2	NV	180	NV
DEQ RBC for Direct Contact with Groundwater in Excavations		NV	NV	NV	NV	NV	680	NV	NV	NV
DEQ RBC for Vapor Intrusion into Buildings (Occupational)		NV	NV	NV	NV	NV	NV	NV	NV	NV
DEQ Level II SLVs, Aquatic		520	NV	NV	6.16	3.9	620	6.3	NV	NV
AWQC, fish ingestion		990	NV	0.018	140	5,300	NV	NV	4,000	NV

Table 9
Metals in Surface Water (ug/L)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Aluminum ug/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Calcium ug/L	Chromium ug/L
SW-1	42.2 B	ND	ND	19.4	ND	ND	14,700	ND
SW-2	ND	ND	ND	5.2	ND	ND	14,700	ND
Screening Criteria								
DEQ Level II SLVs, aquatic	87	1,600	150	4	5.3	2.2	116,000	11 (IV)/ 74 (III)
AWQC, fish ingestion	NV	640	0.14	NV	NV	NV	NV	NV

Table 9
Metals in Surface Water (ug/L)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Cobalt ug/L	Copper ug/L	Iron ug/L	Lead ug/L	Magnesium ug/L	Manganese ug/L	Mercury ug/L	Nickel ug/L
SW-1	ND	ND	97.5	ND	4,640	16	ND	ND
SW-2	ND	ND	20.9	ND	4,640	4.3 B	ND	ND
Screening Criteria								
DEQ Level II SLVs, aquatic	23	9	1,000	2.5	82,000	120	0.77 (elemental, total)	52
AWQC, fish ingestion	NV	NV	NV	NV	NV	NV	0.3 (methyl)	4,600

Table 9
Metals in Surface Water (ug/L)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Potassium ug/L	Selenium ug/L	Silver ug/L	Sodium ug/L	Thallium ug/L	Vanadium ug/L	Zinc
SW-1	ND	ND	ND	7,450	ND	4.9 B	4.4 B
SW-2	ND	ND	ND	5,720	ND	ND	ND
Screening Criteria							
DEQ Level II SLVs, aquatic	53,000	5	0.12	680,000	40	20	120
AWQC, fish ingestion	NV	4,200	NV	NV	6,300	NV	26,000

Table 10
Benzo(a)pyrene in Surface Soil (0–0.5 bgs) within 100 feet of Top of Riverbank (ug/kg)
Marine Finance Corporation Property
Portland, Oregon

Sample Location	Date	Benzo(a)-pyrene (ug/kg)
SS-1	8/11/2000	0.32 U
SS-2	8/11/2000	0.91
SS-3	8/10/2000	0.32
SS-7	08/09/00	470 U
SS-8	8/10/2000	0.33 U
SS-9	08/10/00	0.79
SS-10	8/10/2000	0.33 U
SS-11	08/10/00	0.33 U
SS-12	08/20/03	330
SS-14	08/20/03	66.3
SS-15	08/20/03	171
SS-16	08/20/03	361
SS-17	08/20/03	244
SS-18	08/20/03	129
SS-21	10/15/03	692
Mean		164.4
Reliable Consensus-Based PEC		1,450
DEQ Level II SLV Sediment —Bioaccumulation		100

Table 11
Detections of Semivolatile Organic Compounds in Sediment (ug/kg)
Marine Finance Corporation Property
Portland, Oregon

Location	SD-1	SD-2S	SD-3S	SD-4S	SD-4D	SD-5S	SD-5D	SD-6S	SD-6D
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
N-Nitrosodiethylamine		NA		NA	NA	NA	NA	NA	NA
Aniline		NA		NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether									
Phenol	6 J		7 J	6 J	9 J			6 J	6 J
2-Chlorophenol									
1,3-Dichlorobenzene									
1,4-Dichlorobenzene									
1,2-Dichlorobenzene									
Benzyl Alcohol									
bis(2-Chloroisopropyl)ether									
2-Methylphenol									
Hexachloroethane									
N-Nitroso-di-n-propylamine		3 J							
3- and 4-Methylphenol									
Nitrobenzene									
Isophorone									
2-Nitrophenol									
2,4-Dimethylphenol									
bis(2-chloroethoxy)methane									
2,4-Dichlorophenol									
Benzoic Acid	50 J	80 J	50 J	80 J	50 J			80 J	50 J

Table 11
Detections of Semivolatile Organic Compounds in Sediment (ug/kg)
Marine Finance Corporation Property
Portland, Oregon

Location	SD-1	SD-2S	SD-3S	SD-4S	SD-4D	SD-5S	SD-5D	SD-6S	SD-6D
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
1,2,4-Trichlorobenzene									
Naphthalene	4 J	29 J	18 J	140 J	99 J	300 J	1,200	19 J	10 J
4-Chloroaniline									
Hexachlorobutadiene									
4-Chloro-3-methylphenol									
2-Methylnaphthalene	2 J	8 J	10 J	35	17	100 J	920	10 J	3 J
Hexachlorocyclopentadiene									
2,4,6-Trichlorophenol									
2,4,5-Trichlorophenol									
2-Chloronaphthalene									
2-Nitroaniline									
Acenaphthylene	6 J	40 J	33 J	280 J	270 J	100 J	600 J	42 J	10 J
Dimethylphthalate	0.6 J	1 J		1 J	0.5 J				
2,6-Dinitrotoluene									
Acenaphthene	29	50	94	200	270	1,500	18,000	83	10 J
3-Nitroaniline									
2,4-Dinitrophenol									
Dibenzofuran	7 J	23	25	69	21	200 J	1,500	6 J	2 J
4-Nitrophenol							600 J		
2,4-Dinitrotoluene									
Fluorene	16	46	55	310	370	1,600	16,000	35	8 J

Table 11
Detections of Semivolatile Organic Compounds in Sediment (ug/kg)
Marine Finance Corporation Property
Portland, Oregon

Location	SD-1	SD-2S	SD-3S	SD-4S	SD-4D	SD-5S	SD-5D	SD-6S	SD-6D
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
4-Chlorophenylphenyl ether									
Diethylphthalate	3 J	4 J	3 J	10 J	3 J			2 J	3 J
4-Nitroaniline									
2-Methyl-4,6-Dinitrophenol									
N-Nitrosodiphenylamine									
4-Bromophenylphenyl ether									
Hexachlorobenzene									
Pentachlorophenol									
Phenanthrene	130 J	120 J	180 J	2,000	2,300	15,000	120,000	150 J	82 J
Anthracene	29 J	38 J	53 J	280	170 J	820	25,000	46 J	10 J
Di-n-butylphthalate									
Fluoranthene	230 J	180 J	250 J	4,100	4,100	17,000	100,000	210 J	360 J
Pyrene	220 J	200 J	260 J	4,100	3,900	21,000	130,000	240 J	450 J
Butylbenzylphthalate		6 J	3 J				100 J	4 J	
3,3'-Dichlorobenzidine									
Benzo(a)anthracene	120	93	110	2,100	1,700	6,100	28,000	100	100 J
Chrysene	140	120	130	2,300	2,100	7,200	34,000	130	100 J
bis(2-Ethylhexyl)phthalate	50 J	90 J	300 J	90 J	20 J		200 J	90 J	
Di-n-octylphthalate									
Benzo(b)fluoranthene	170 J	110 J	120 J	2,200	1,900	6,400	25,000	130 J	100 J
Benzo(k)fluoranthene	55	38	41	221	210	2,400	7,900	44	60 J

Table 11
Detections of Semivolatile Organic Compounds in Sediment (ug/kg)
Marine Finance Corporation Property
Portland, Oregon

Location	SD-1	SD-2S	SD-3S	SD-4S	SD-4D	SD-5S	SD-5D	SD-6S	SD-6D
Units	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Benzo(a)pyrene	120	100	110	2,000	1,600	6,800	30,000	130	100 J
Indeno(1,2,3-cd)pyrene	58	63	100	1,600	340	5,600	21,000	100	100 J
Dibenzo(a,h)anthracene	10 J	10 J	20 J	97	58	400 J	1,900	20 J	
Benzo(g,h,i)perylene	44	56	99	1,700	300	5,700	25,000	110	200 J
LPAH	187 J	293 J	390 J	2,965 J	3,326 J	18,600 J	156,720 J	339 J	123 J
HPAH	1,196 J	1,008 J	1,293 J	20,698 J	16,378 J	79,420 J	427,800	1,260 J	1,580 J

Table 12
Summary of Potential Sources and Transport Pathways to the Willamette River
Marine Finance Corporation Property
Portland, Oregon

Potential Sources	Media Impacted						Chemicals of Interest				Potential Complete Pathway				
	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	Surface Water	River Sediment	Benzo(a)pyrene	Polycyclic Aromatic Hydrocarbons	Lead	Copper	Overland Transport	Groundwater	Direct Discharge—Overwater	Direct Discharge—Storm/Wastewater	Riverbank Erosion
<i>Upland Areas</i>															
Soil within 100 feet of the top of the riverbank	■						■		■	■	■			■	
<i>Overwater Areas</i>															
Hendren Tow Boat						■		■					■		

FIGURES



BASE MAP PREPARED FROM DELORME 3-D TOPOQUADS (1999).

SITE ADDRESS: 8444 NW ST. HELENS ROAD, PORTLAND, OREGON
NE1/4 SE 1/4 OF S11, T1N, R1W

0 2000 4000
SCALE IN FEET

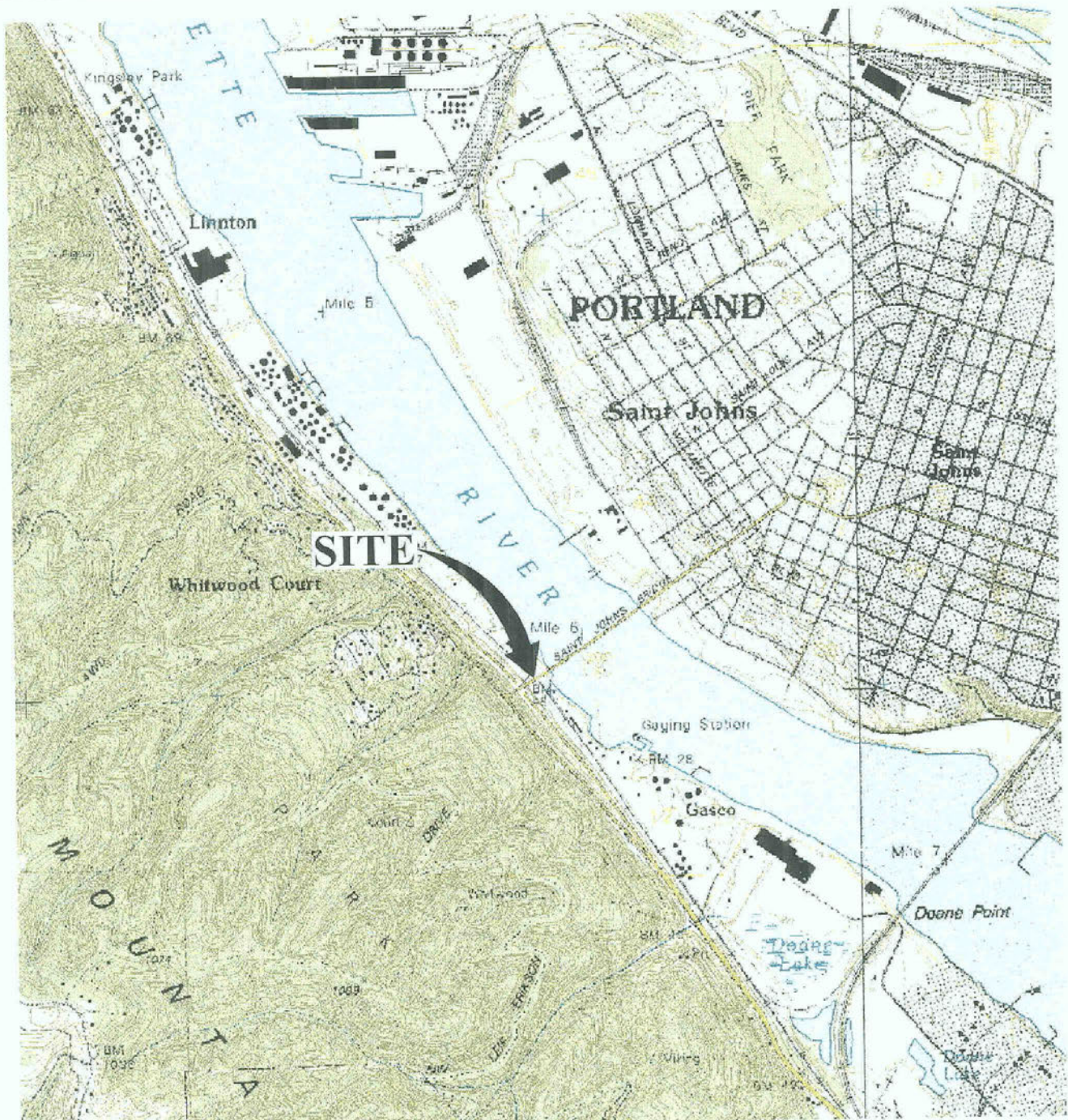


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Portland:
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Figure 1
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PROPERTIES
PORTLAND, OREGON
SITE LOCATION

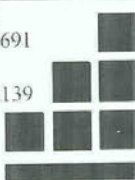


BASE MAP PREPARED FROM DELORME 3-D TOPOQUADS (1999).

SITE ADDRESS: 8444 NW ST. HELENS ROAD, PORTLAND, OREGON
NE1/4 SE 1/4 OF S11, T1N, R1W

0 2000 4000
SCALE IN FEET

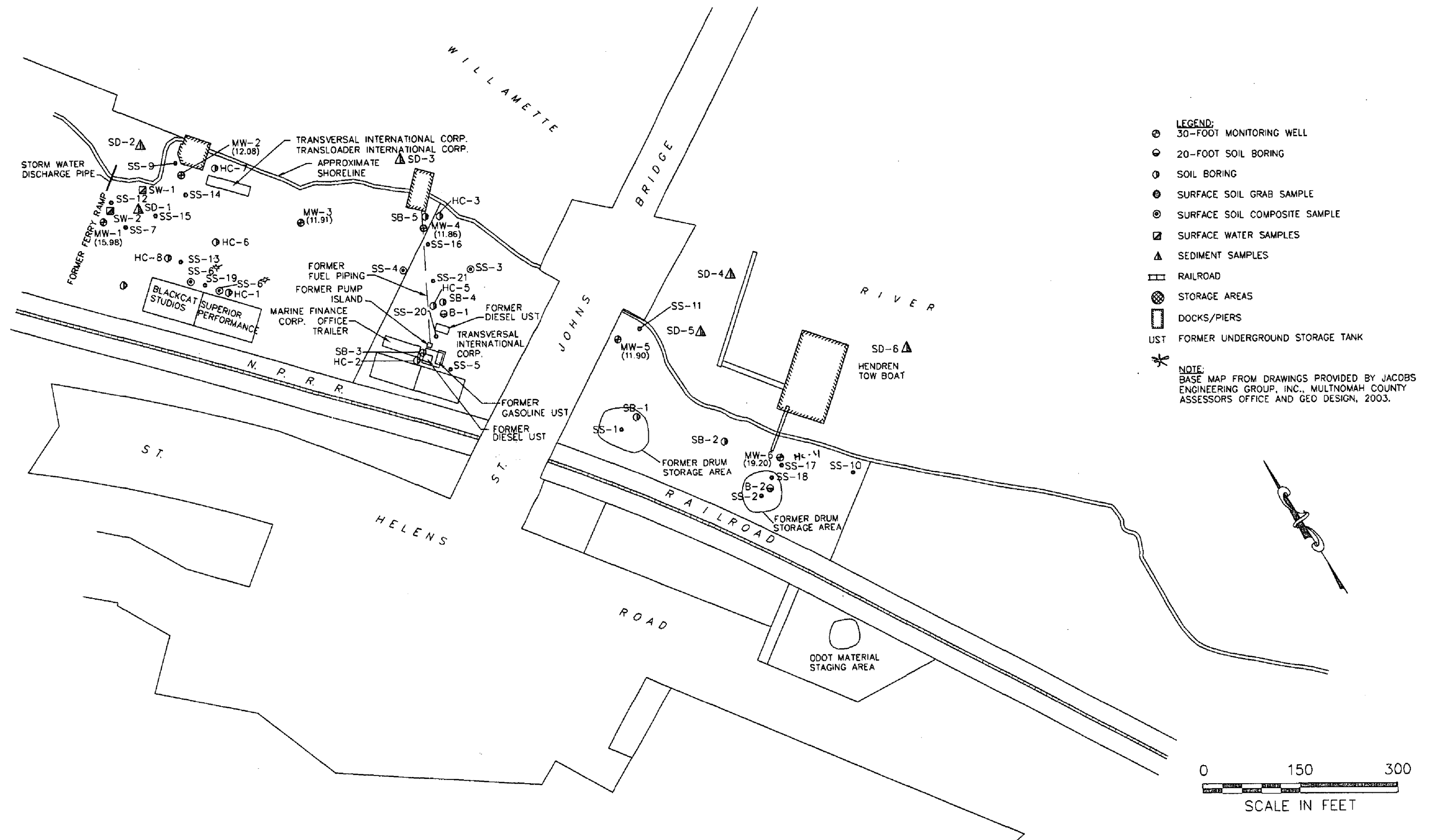
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Figure 1
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PORTLAND, OREGON
SITE LOCATION

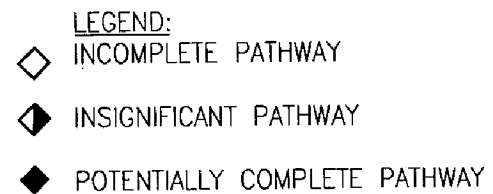


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Figure 2
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES, LLC
PORTLAND, OREGON
SITE FEATURES AND
SAMPLE LOCATIONS

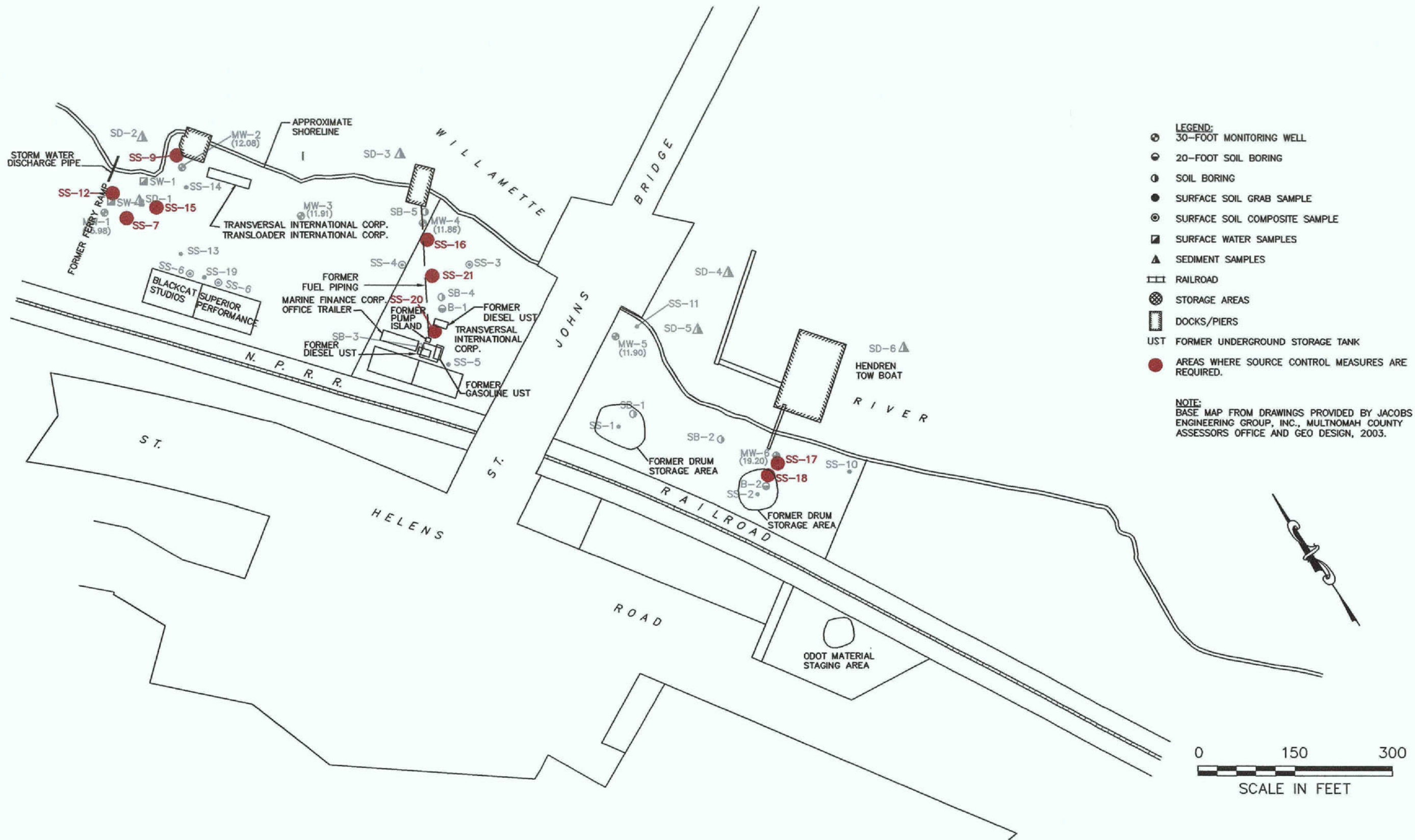


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Figure 4
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
PORTLAND, OREGON
CONCEPTUAL SITE MODEL OF
POTENTIAL ECOLOGICAL EXPOSURE PATHWAYS



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Figure 5
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
PORTLAND, OREGON
AREAS REQUIRING SOURCE
CONTROL MEASURES

APPENDIX A
LEVEL I SCOPING ECOLOGICAL RISK ASSESSMENT

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DATE:

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**LEVEL I SCOPING ECOLOGICAL
RISK ASSESSMENT
MARINE FINANCE CORPORATION PROPERTY
8444 N.W. ST. HELENS ROAD
PORTLAND, OREGON**

Prepared for

Advanced American Construction Properties, LLC

October 19, 2004

Prepared by

Maul Foster & Alongi, Inc.
3121 SW Moody Avenue, Suite 200
Portland, Oregon 97239

Project No. 0100.01.01

**Level I Scoping Ecological Risk Assessment
Marine Finance Corporation Property
8444 N.W. St. Helens Road
Portland, Oregon**

The material and data in this report were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.

Jeffrey Peterson, Ph.D.
Supervising Environmental Scientist

Anna St. John, R.G.
Project Manager

CONTENTS

TABLES AND ILLUSTRATIONS	vii
ACRONYMS AND ABBREVIATIONS	ix
1 INTRODUCTION	1-1
2 BACKGROUND	2-1
2.1 Site Setting	2-1
2.2 Hazardous Substances	2-2
2.3 Locality of the Facility	2-2
3 HABITAT CONDITIONS AND ECOLOGICAL RECEPTORS	3-1
3.1 Sensitive Environments	3-1
3.2 Species of Special Concern	3-1
3.3 Site Description	3-5
4 EXPOSURE PATHWAYS	4-1
5 RECOMMENDATIONS	5-1
LIMITATIONS	
REFERENCES	
FIGURES	
APPENDIX 1 THREATENED AND ENDANGERED SPECIES OF OREGON	
APPENDIX 2 RESULTS OF OREGON NATURAL HERITAGE PROGRAM DATABASE SEARCH	
APPENDIX 3 ECOLOGICAL SCOPING CHECKLIST	
APPENDIX 4 SITE PHOTOGRAPHS	

TABLES AND ILLUSTRATIONS

Following Report:

Figures

- 1 Site Location
- 2 Site Features and Sample Locations

ACRONYMS AND ABBREVIATIONS

AACP	Advanced American Construction Properties, LLC
DEQ	Oregon Department of Environmental Quality
ERA	ecological risk assessment
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
Jacobs	Jacobs Engineering Group, Inc.
LOF	locality of the facility
MFA	Maul Foster & Alongi, Inc.
MFC	Marine Finance Corporation
NMFS	National Marine Fisheries Service
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ONHP	Oregon Natural Heritage Program
PAH	polycyclic aromatic hydrocarbon
PPA	Prospective Purchaser's Agreement
SCEP	Source Control Evaluation and Plan
T&E	threatened and endangered
USFWS	U.S. Fish and Wildlife Service

1 INTRODUCTION

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster and Alongi, Inc. (MFA) has prepared this level I scoping ecological risk assessment (ERA) for the Marine Finance Corporation (MFC) property at 8444 N.W. St. Helens Road, Portland, Oregon (see Figure 1). AACP is currently negotiating a Prospective Purchaser's Agreement (PPA) for the property with the Oregon Department of Environmental Quality (DEQ). To focus the scope of work for the PPA, the DEQ requested this level I ERA as part of the Source Control Evaluation and Plan (SCEP) for the site.

The DEQ advocates a tiered process to evaluate potential risks that chemical releases may pose to the environment (DEQ, 1998). The first step in this tiered process is a level 1 scoping ERA. The objective of the scoping ERA is to determine if important ecological receptors can have significant exposure to site-related chemicals. This report describes the ecological conditions near the site, and evaluates whether there are important pathways by which ecological receptors may contact chemicals associated with historical releases.

2 BACKGROUND

This section provides background information such as site setting, site history, and a description of the hazardous substances that are known or suspected to have been released at the site. More complete relevant background information is provided in the in the Phase One Environmental Assessment Report (PBS Environmental, 1993), the Preliminary Assessment and Expanded Preliminary Assessment Work Plan (Jacobs Engineering Group, Inc. [Jacobs], 2000a), the Expanded Preliminary Assessment Data Report (Jacobs, 2000b), the Phase II Environmental Site Assessment (GeoDesign, Inc., 2003), and the screening-level risk evaluation (MFA, 2004).

2.1 Site Setting

The MFC site includes approximately 7.46 acres of land along the west bank of river mile 6 of the Willamette River in Portland, Oregon (see Figure 1). The St. Johns Bridge passes over the site, and approximately two-thirds of the property is located north of the bridge (see Figure 2). The property is flat to gently sloping toward the river. The site is located in section 11, township 1N, range 1W, Willamette Meridian.

Presently, the site is used for temporary equipment storage for painting of the St. Johns Bridge, office operations for an import/export company, studio space for a metal sculptor, and tugboat moorage and operations. Structures at the site include two metal Quonset huts, a wood-frame modular office building, a small trailer house, a small wooden shed, and a floating-home builder's dock, as well as a gangway and docks leased by a tugboat company, Hendren Tow Boat. The actively used areas of the site have limited vegetative cover and consist mostly of gravel. A riprap-armored embankment is located adjacent to the river.

Based on observation of site topography and hydrogeology, it is possible that stormwater runoff can migrate to surface water of the Willamette River at some locations. Also, it appears that the shallow groundwater gradient at the site is toward the Willamette River. Depending on the season, shallow groundwater may discharge to the Willamette River.

2.2 Hazardous Substances

Based on past site uses and the findings of previous environmental investigations, chemicals of interest in soil and groundwater include heavy metals, petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), and butyltins. In general, these chemicals are not expected to bioaccumulate in food chains to any significant degree. For example, fish, mammals, and other vertebrates typically metabolize PAHs, and these chemicals have little tendency to accumulate in vertebrate tissues. However, some PAHs may accumulate in the tissues of invertebrates.

2.3 Locality of the Facility

The locality of the facility (LOF) is defined as “any point where a human or ecological receptor contacts, or is reasonably likely to come into contact with, facility-related hazardous substances” (Oregon Administrative Rule [OAR] 340-122-115(34)). The LOF is defined after considering potential spatial migration of a chemical.

The nature and extent of site-related impacts to soil and groundwater have been relatively well defined. However, characterization of potential sediment impacts is incomplete. For the purposes of this level 1 ERA, the LOF for soil is considered all surface and subsurface soil at the site. Also, it is assumed that impacted groundwater can discharge to surface water of the Willamette River, and the river adjacent to the site is considered within the LOF. It is assumed that site-related chemicals can migrate from soil or groundwater to sediment of the Willamette River adjacent to the site. The spatial extent of sediment with site-related chemicals is undefined, but it is assumed that the LOF for sediment is limited to sediments adjacent to the site and near the shore.

3 HABITAT CONDITIONS AND ECOLOGICAL RECEPTORS

3.1 Sensitive Environments

Sensitive environments are defined as areas of particular environmental value where a hazardous substance could pose a greater threat than in other, nonsensitive areas (OAR 340-122-155 (49)). Sensitive environments include, but are not limited to, critical habitat for federally endangered or threatened species; national parks; monuments; national marine sanctuaries; national recreational areas; national wildlife refuges; national forest campgrounds; recreational areas; game management areas; wildlife management areas; designated federal wilderness areas; wetlands (freshwater, estuarine, or coastal); wild and scenic rivers; state parks; state wildlife refuges; habitat designated for state endangered species; fishery resources; state-designated natural areas; county or municipal parks; and other significant open spaces and natural resources protected under Goal 5 of Oregon's Statewide Planning Goals.

The only sensitive environment near the site is the Willamette River, which serves as a migratory route and habitat for endangered and threatened anadromous salmonids. Site-related chemicals of interest may enter the river as particulates suspended in surface water discharged to the Willamette River, surface soils eroded from the upland part or bank of the site, groundwater discharging to the Willamette River, and suspended sediment transported from upriver sources.

3.2 Species of Special Concern

According to DEQ guidance (DEQ, 1998), the following are considered ecologically important species for the purposes of the level I ERA:

- Threatened or endangered species
- Local populations of species that are commercial or recreational resources
- Local populations of species known to be susceptible to site-related chemicals
- Local populations of vertebrate species

- Local populations of invertebrate species that provide a critical ecological function

Species that are classified as “threatened” or “endangered” receive special protection under the state and federal Endangered Species Acts (ESAs). State-listed threatened and endangered (T&E) species classifications are made by the Oregon Department of Fish and Wildlife (ODFW). Federal T&E species classifications are made by both the U.S. Fish and Wildlife Service (USFWS) and the National Oceanographic and Atmospheric Administration (NOAA, formerly the National Marine Fisheries Service of NOAA). NOAA usually determines the T&E status of marine species or species that spend some portion of their lives in marine systems (e.g., anadromous salmonids). The T&E status of other species is usually determined by the USFWS.

Threatened or endangered species that may occur in the area were identified by reviewing the ODFW list of state and federal T&E species that are permanent or seasonal residents of Oregon (Appendix 1). Range maps and habitat use information described in Marshall et al. (1996) were reviewed to determine if nonfish T&E species may be present in the north Portland area. The results of this review are described below.

No amphibian, reptile, or mammal species that have been classified as threatened or endangered reside in the area. Three T&E bird species may occur in the area, but none is expected to use habitats in the LOF to any significant degree. These species are as follows:

- Aleutian Canada goose (*Branta canadensis leucoparela*): This Canada goose subspecies is listed by the State of Oregon as endangered. The Aleutian Canada goose was delisted by the USFWS in March 2001 because population recovery goals had been met. Controlled hunting of these geese now takes place in some states, including Oregon. Members of a subpopulation of this goose have been known to occasionally stop over in the Willamette Valley during its migration between wintering grounds in California and breeding sites in Alaska (Marshall et al., 1996). However, the large majority of migrants that visit Oregon occur on the coast. The nearest potential stopover area is likely to be Sauvie Island. Because of the disturbed nature of the site, it is unlikely that the upland parts of the site provide important foraging habitat for Canada geese.
- Bald eagle (*Haliaeetus leucocephalus*): The bald eagle is currently listed by both the federal government and the State of Oregon as threatened. A petition to remove federal ESA protection for the bald eagle due to recovery is pending. In western Oregon, bald eagles typically breed near large water bodies with fish, in close proximity to large trees for nesting. The site supports no large trees that may serve as significant roosting or nesting areas. The eagle preys primarily on fish and waterfowl, but also forages on small mammals and carrion. For a

variety of reasons, it is highly unlikely that an eagle could have significant exposure to site-related chemicals. Typical breeding and wintering ranges for eagles are several thousand acres in size (U.S. Environmental Protection Agency, 1993). The entire site is so small relative to an eagle's foraging area that only a very small fraction of its diet could possibly contain site-related chemicals. Also, because the site does not contain natural plant or animal communities, the density of potential prey species for eagles is very low and the site does not offer important foraging habitat for eagles.

- **Peregrine falcon** (*Falco peregrinus*): The American peregrine falcon is currently listed by the State of Oregon as endangered. This subspecies was classified as recovered by the federal government and delisted in 1999. The American peregrine falcon may occur throughout Oregon. These falcons typically nest on cliffs near large open areas with an ample food supply (Marshall et al., 1996). They prey primarily on waterbirds. The site does not contain suitable nesting habitat for this species. Peregrine falcons are unlikely to have significant exposure to site-related chemicals in soil for many of the same reasons described above for the Bald eagle.

Information regarding the known or suspected presence of threatened or endangered species, or their habitat, in the LOF was also made by reviewing a search of the Oregon Natural Heritage Program (ONHP) database of reported sightings of rare, threatened, and endangered plant and animal species; this search was recently performed for a site located less than one mile to the southeast at the base of Waud Bluff and the University of Portland on the eastern shore of the Willamette River (MFA, 2001). Results of this ONHP database search produced the following records of rare, threatened, or endangered species within a 1-mile radius of the MFC site (Appendix 2):

- **Tri-colored blackbird** (*Agelaius tricolor*). The database results indicate that tri-colored blackbirds were observed in 1983 and 1985 at St. Johns Landfill. Nesting colonies of 20 to 30 birds were observed in each case. The federal status of this species is as a species of concern. Suitable nesting habitat is not present at the site, and this species is unlikely to be present at the site.
- **Pacific pallid bat** (*Antrozous pallidus pacificus*). A large number of these bats were observed flying around a church tower in Portland in 1927. The last sighting of this species occurred in the Portland area in 1928. The bat's federal status is as a species of concern. It is state-designated as a sensitive-vulnerable species. This species is not likely to be present at the site.
- **Northwestern pond turtle** (*Clemmys marmorata marmorata*). A sighting of this species occurred somewhere within a 2-mile radius of the site. The date of the sighting is not available. It is federally designated as a species of concern,

and state-designated as a sensitive-critical species. This species is not likely to be present at the site.

- **Bristly sedge** (*Carex comosa*). This species was last observed in 1887. It is available as a herbarium specimen. It has no federal or state designation. This species is not likely to be present at the site.
- **Coho salmon** (*Oncorhynchus kisutch*). Coho salmon are known to use the Willamette River during parts of their life cycle. The Willamette River from the mouth to Oregon City is within the lower Columbia River Evolutionary Significant Unit (ESU) for coho. It is possible that wild coho from the Clackamas River pass through the section of the Willamette near the site. This coho ESU is listed by the ODFW as an endangered species, but the NMFS does not consider it threatened or endangered. Instead, the NMFS has classified this coho population as a candidate species for listing.
- **Chinook salmon** (*Oncorhynchus tshawytscha*). The section of the Willamette River adjacent to the site is within the boundaries of the Lower Columbia River ESU of the fall run of Chinook salmon. Also, spring run Chinook of the Upper Willamette River ESU pass through this section of river. These Chinook ESUs have been listed by the NMFS as threatened. The lower Willamette River serves as a migration corridor for both juvenile and adult fish, and could be a rearing area for juvenile Chinook. Insufficient data are available to estimate residence times in the Willamette near the site. However, fish with relatively small juveniles such as fall Chinook (not spring Chinook or steelhead) would likely have significant residence times during rearing. Adult salmon, or fish runs with relatively large juveniles, would be expected to migrate through the lower Willamette relatively quickly.
- **Steelhead trout** (*Oncorhynchus mykiss*). Steelhead trout are known to use the Willamette River during parts of their life cycle. The Willamette River near the site is within the Lower Columbia River ESU, and is a migration corridor for steelhead of the Upper Willamette River ESU. These steelhead ESUs have been listed by the NMFS as a threatened. The state lists this fish as a sensitive-critical species.

In addition to the above species identified in the ONHP search, other fish of special concern that may be present in the lower Willamette River at certain times of the year include the cutthroat trout (*Oncorhynchus clarki clarki*) and chum salmon (*Oncorhynchus keta*). Cutthroat trout in the Willamette River and tributaries downstream from Willamette Falls were proposed for listing as a threatened species in the mid-1990s, but in 2002 the USFWS determined that populations are robust and do not require listing at this point.

NOAA lists the chum salmon as a threatened species in the lower Columbia River ESU. Chum salmon could be present in the Willamette River if the fish were to intermittently use the part of the Willamette River near its confluence with the Columbia River (MFA, 2001). In general, chum salmon prefer small tributary streams that empty into the Columbia River. Historically, this species may have used the Willamette River as a spawning ground, but now they probably use it only sporadically for a part of their rearing cycle and for grazing.

The Willamette River in the region is used by salmonids primarily for upstream and downstream migration, although some rearing and feeding by juveniles probably occurs during their downstream migration. No salmonid spawning habitat exists in or downstream of the region. Therefore, the Willamette River in the region is not designated as "essential habitat" (habitat necessary to prevent the depletion of indigenous anadromous salmonid species during their life history stages of spawning and rearing) by the Oregon Division of State Lands (MFA, 2001). However, the Willamette River is listed by NOAA as critical habitat for these fish species.

In summary, no T&E amphibian, reptile, bird, or mammal species are expected to have significant exposure to site-related chemicals. However, T&E fish species such as Chinook and steelhead could possibly contact site-related chemicals if a sufficient mass of a contaminant in groundwater or stormwater migrates and discharges to the Willamette River.

Juvenile salmon undergo a complex smoltification process as they move from freshwater to a saltwater environment. This process may involve a number of important hormonal changes. In theory, relatively brief exposures to elevated levels of certain contaminants during the juvenile stage, especially substances that accumulate in tissues and mimic endogenous hormones, could lead to significant biological effects during smoltification. Certain chemicals also may be released from fat stores during smoltification. Most site-related chemicals in soil are unlikely to bioaccumulate in fish tissues. Also, the site-related chemicals in soil are unlikely to act as endocrine disruptors. However, for the purposes of this scoping assessment, it is assumed that T&E species could possibly be exposed to biologically significant levels of site-related contaminants in sediment.

3.3 Site Description

An MFA ecologist conducted a site visit on the morning of October 14, 2004. The weather during the time of the visit was sunny, the temperature was approximately 60°F, and winds were variable and from the north. A DEQ checklist of ecological conditions at the site is presented in Appendix 3. Photographs of site conditions are presented in Appendix 4.

Almost all land at the site is developed and there are no natural habitats on the property that could support important ecological receptors (see Appendix 4). It appears that over 80 percent of the surface is covered with gravel or structures, and most of the upland area is being used for equipment storage and other site operations. Along the entire length of the property, the riverbank has been stabilized with riprap.

Although site operations have prevented vegetation from becoming established over most of the site, some vegetation has become established in areas where disturbance is less frequent. For example, almost the entire riverbank (over 90 percent), from the top of the bank to approximately the ordinary high water level, is covered in vegetation. The plant community covering this part of the bank is simple and dominated by a few invasive species. Very little vegetation extends below the approximate ordinary high water level. It appears that wave actions, and regular flooding associated with fluctuations in water levels of the Willamette River, prevent the establishment of vascular plants in this lower part of the bank. No emergent vegetation was observed near the interface between the riprap and the sediment.

The strip of vegetation along the bank is approximately 40 to 50 feet wide. This plant community is dominated by Himalaya berry (*Rubus discolor*), although Scotch broom (*Cytisus scoparius*) and a few other plant species are also present. Himalaya berry is an invasive plant native to Eurasia and brought to the Pacific Northwest in the late 1800s. The plant has canes that are heavily armored with stout thorns, and it often forms dense thickets that displace native plants. Himalaya berry represents approximately 80 percent of the plant cover, with the remaining cover comprising Scotch broom, grasses, and other plants. The plants appear to be rooted in soil beneath the riprap armoring, and in soil near the top of the bank. The average height of the dominant plant species is approximately 3 feet.

Over most of the site, the density of trees along the bank is low and the tree canopy generally covers less than 3 percent of the bank. The most common tree along the bank is maple (*Acer spp.*), and most of the trees were less than approximately 30 feet in height.

In addition to the bank, Himalaya berry thickets have become established in other relatively undisturbed areas of the site. Small thickets of Himalaya berry approximately 20 to 30 feet wide were observed in several locations between the railroad right-of-way and the southwestern property boundary.

In summary, the property is an active commercial/industrial site and does not support important terrestrial ecological habitats. Planned construction and development activities will likely prevent important ecological habitats from developing at the site in the foreseeable future. A simple plant community dominated by invasive exotics has become established in the relatively undisturbed sections of the site such as the riverbank. Although a variety of small wildlife species (primarily birds) that are tolerant of human

disturbance may occasionally forage, nest, or roost at the site, the existing vegetative cover is both too small and too degraded to represent important habitat for native wildlife.

4 EXPOSURE PATHWAYS

There are no significant pathways by which important terrestrial ecological receptors can be exposed to site-related chemicals in soil. However, if chemicals that have been detected in surface soil or groundwater migrate to the Willamette River, then it is possible that organisms in the river could contact site-related chemicals. A DEQ checklist of ecologically important exposure pathways is presented as Appendix 3.

As discussed previously, the site does not contain natural habitats that would support important terrestrial ecological receptors. Some exotic plant species such as the introduced Himalaya berry are present at the site, but these degraded plant communities do not comprise valuable habitat for most native wildlife in the area. Most of the land surface is covered with buildings, gravel, or riprap. There are few areas with exposed surface soil, and few areas that could possibly support burrowing wildlife species (no burrows were observed). Regardless of where contaminants may be located in soil at the site, there are no areas where wildlife could have significant contact with surface or subsurface soil.

It is unlikely that ecological receptors can have direct contact with chemicals in groundwater. With the possible exception of a few trees located near the top of the bank, there are no deep-rooted plants at the site that may have roots within the shallow groundwater zone. Also, there are no burrowing animals at the site that could potentially contact shallow groundwater or inhale volatile chemicals that migrate from groundwater into burrow air.

The dynamics of shallow groundwater flow at the site are not fully understood, but it is likely that groundwater is migrating to the Willamette River. Assuming that impacted groundwater discharges to the river, the possibility exists that aquatic ecological receptors could contact site-related chemicals. A variety of factors would cause substantial attenuation of chemicals that migrate from groundwater to surface water of the river. Mixing of impacted groundwater and ambient water from the Willamette River is likely to occur well below the bottom surface of the river (i.e., in the hyporheic zone). As a result, concentrations of site-related chemicals in surface water of the river, or in sediment pore-water near the sediment/water interface (the most biologically active zone of river sediment), are expected to be much lower than concentrations in groundwater.

Most of the surface of the site is permeable, and it appears that most precipitation falling on the site infiltrates the surface. No apparent stormwater collection system is present at

the site. Precipitation appears to pond on the surface following large storm events. Sheet runoff appears to be the most plausible mechanism by which soil could be transported to the river. However, over most of the site there were no obvious preferential pathways of stormwater flow on the surface toward the Willamette River (i.e., there was no visible evidence of scouring on the surface or along the bank that might have been expected if surface water had followed preferential flow paths). It is assumed that stormwater runoff could transport chemicals in surface soil to sediment of the Willamette River, and benthic organisms in sediment could be exposed to site-related chemicals.

5 RECOMMENDATIONS

No further ecological evaluations are recommended for upland soil at the site. All available evidence indicates that there are no significant pathways by which important terrestrial ecological receptors could be exposed to site-related chemicals that may be present in soil. However, it is possible that site-related chemicals in soil, groundwater, or stormwater could migrate to surface water and sediment of the Willamette River where they could be encountered by aquatic ecological receptors. This potential ecological exposure scenario is further evaluated in the SCE report¹.

¹ MFA. 2004. Source Control Evaluation and Plan. October

LIMITATIONS

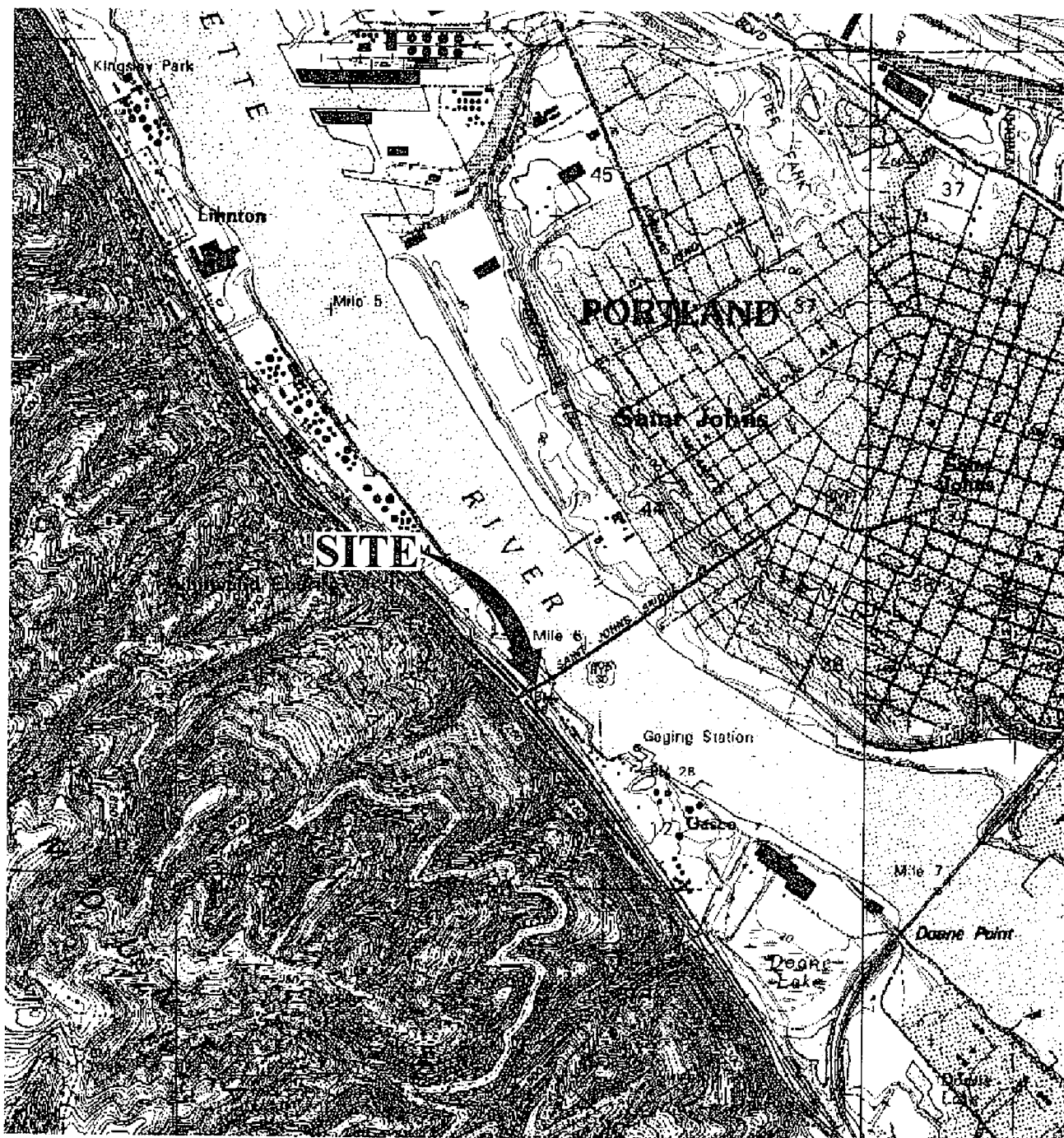
The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

REFERENCES

- DEQ. 1998. Guidance for ecological risk assessment: level I scoping. Oregon Department of Environmental Quality. November.
- GeoDesign, Inc. 2003. Phase II environmental site assessment, Marine Finance Corporation, 8444 NW St. Helens Road, Portland, Oregon. June 16.
- Jacobs. 2000a. Preliminary assessment and expanded preliminary assessment work plan, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for Oregon Department of Environmental Quality. July.
- Jacobs. 2000b. Expanded preliminary assessment data report, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for Oregon Department of Environmental Quality. October.
- Marshall, D. B., M. W. Chilcote, and H. Weeks. 1996. Species at risk: sensitive, threatened and endangered vertebrates of Oregon. 2d ed. Oregon Department of Fish and Wildlife, Portland, Oregon.
- MFA. 2001. Level 1 scoping ecological risk assessment, Triangle Park, LLC, 5828 N Van Houten Place, Portland, Oregon. Prepared by Maul Foster & Alongi, Inc. December 18.
- MFA. 2004. Screening-level risk evaluation for soil and groundwater, Marine Finance Corporation Property, Portland, Oregon. Prepared for Advanced American Construction Properties, LLC, by Maul Foster & Alongi, Inc. August 13.
- PBS Environmental. 1993. Phase one environmental property assessment report for Riverside Park, Portland, Oregon.
- U.S. Environmental Protection Agency. 1993. Wildlife exposure factors handbook. Office of Research and Development. EPA/600/R-93/187. December.

FIGURES



BASE MAP PREPARED FROM DELORME 3-D TOPOQUADS (1999).

SITE ADDRESS: 8444 NW ST. HELENS ROAD, PORTLAND, OREGON
NE1/4 SE 1/4 OF S11, T1N, R1W

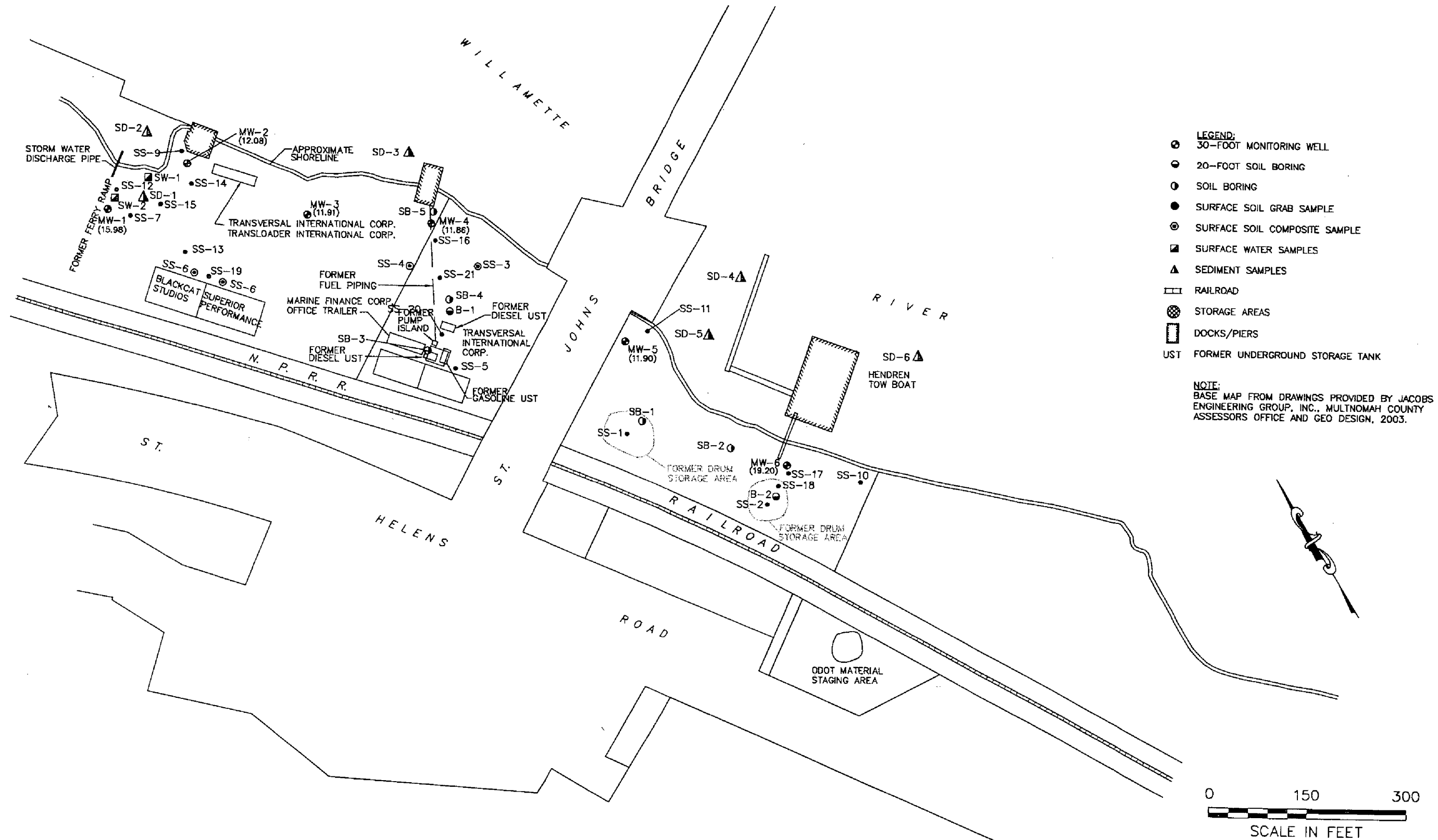
0 2000 4000
SCALE IN FEET

Vancouver: (360) 694-2691	
Portland: (971) 544-2139	

DATE	08/09/04
DWN.	DLG
APPR.	ASJ
REVIS.	
PROJECT NO.	0100.01.01

Figure 1
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
LINNTON, OREGON

SITE LOCATION



Vancouver: (360) 694-2691
Portland: (971) 544-2139



DATE 08/09/04
DWN. DLG
APPR. KST
REVIS.
PROJECT NO.
0100.01.01

Figure 2
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
PORTLAND, OREGON
SITE FEATURES AND
SAMPLE LOCATIONS

APPENDIX 1

THREATENED AND ENDANGERED SPECIES OF OREGON



3406 Cherry Avenue N.E., Salem, OR 97303 :: Main Phone (503) 947-6000 or (800) 726-ODFW

[Home](#) | [Fish](#) | [Wildlife](#) | [News](#) | [Search](#)

Oregon List of Threatened and Endangered Fish and Wildlife Species

Oregon Threatened and Endangered Species List | Oregon Species Listed Under the Federal Endangered Species Act

Oregon Threatened and Endangered Species List:

Key:

T=Threatened; E=Endangered

*Denotes species listed by federal government; () denotes federal listing if different.

¹Federally listed for coastal population only.

Common Name	Scientific Name	Cat
Fish		
Hutton Spring Tui Chub	<i>Gila bicolor</i> sap.	*T
Borax Lake Chub	<i>Gila boraxobius</i>	*E
Bosket Spring Speckled Dace	<i>Rhinichthys osculus</i> ssp	*T
Warner Sucker	<i>Catostomus warnerensis</i>	*T
Snake River Chinook Salmon (Spring/Summer)	<i>Oncorhynchus tshawytscha</i>	*T
Snake River Chinook Salmon (Fall)	<i>Oncorhynchus tshawytscha</i>	*T
Lower Columbia River Coho Salmon	<i>Oncorhynchus kisutch</i>	E
Lahontan Cutthroat Trout	<i>Oncorhynchus clarki henshawi</i>	*T
Lost River Sucker	<i>Deltistes luxatus</i>	*E
Shortnose Sucker	<i>Chasmistes brevirostris</i>	*E
Amphibians and Reptiles		
Green Sea Turtle	<i>Chelonia mydas</i>	*E
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	*E
Loggerhead Sea Turtle	<i>Caretta caretta</i>	*T
Pacific Ridley Sea Turtle	<i>Lepidochelys olivacea</i>	*T
Birds		
Short-tailed Albatross	<i>Diomedea albatrus</i>	*E
Brown Pelican	<i>Pelecanus occidentalis</i>	*E
Aleutian Canada Goose	<i>Branta canadensis leucopareia</i>	E
Bald Eagle	<i>Haliaeetus leucocephalus</i>	*T
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	E
Arctic Peregrine Falcon	<i>Falco peregrinus tundrius</i>	E

Western Snowy Plover
California Least Tern
Marbled Murrelet
Northern Spotted Owl

Charadrius alexandrinus nivosus T(?)
Sterna antillarum browni *E
Brachyramphus marmoratus *T
Strix occidentalis caurina *T

Mammals

Gray Wolf
Kit Fox
Sea Otter
Wolverine
Sei Whale
Blue Whale
Fin Whale
Gray Whale
North Pacific Right Whale
Humpback Whale
Sperm Whale
Washington Ground Squirrel

Canis lupus E(?)
Vulpes macrotis T
Enhydra lutris *T
Gulo gulo T
Balaenoptera borealis *E
Balaenoptera musculus *E
Balaenoptera physalus *E
Eschrichtius robustus E
Eubalaena japonica *E
Megaptera novaeangliae *E
Physeter macrocephalus *E
Spermophilus washingtoni E

Oregon Species Listed Under the Federal Endangered Species Act:

Oregon Chub	<i>Oregonichthys crameri</i>	E
Columbia River Chum Salmon	<i>Oncorhynchus keta</i>	T
Oregon Coast Coho Salmon	<i>Oncorhynchus kisutch</i>	T ²
Southern Oregon Coho Salmon	<i>Oncorhynchus kisutch</i>	T
Upper Willamette River Steelhead	<i>Oncorhynchus mykiss irideus</i>	T
Lower Columbia River Steelhead	<i>Oncorhynchus mykiss irideus</i>	T
Middle Columbia River Steelhead	<i>Oncorhynchus mykiss gairdneri</i>	T
Snake River Steelhead	<i>Oncorhynchus mykiss gairdneri</i>	T
Snake River Sockeye Salmon	<i>Oncorhynchus nerka</i>	E
Upper Columbia River Spring Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	E
Lower Columbia River Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	T
Upper Willamette River Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	T
Bull Trout	<i>Salvelinus confluentus</i>	T
Canadian Lynx	<i>Lynx canadensis</i>	T
Northern (Steller) Sea Lion	<i>Eumetopias jubatus</i>	T
Columbian White-tailed Deer (Lower Columbia River population only)	<i>Odocoileus virginianus leucurus</i>	E

²No National Marine Fisheries Service "take" prohibitions as of 2-24-04.

For more information, contact the U.S. Fish and Wildlife Service or National Marine Fisheries Service (Fisheries).

Updated September 17, 2004

APPENDIX 2

**RESULTS OF OREGON NATURAL HERITAGE PROGRAM
DATABASE SEARCH**

A Cooperative Project of :



April 23, 2001

Alan Hughes
Maul, Foster & Alongi, Inc.
7223 NE Hazel Dell Avenue, Suite B
Vancouver, WA 98665

821 SE 14th Avenue
Portland, Oregon 97214-2537
(503) 731-3070
FAX (503) 230-9639

Dear Mr. Hughes:

Thank you for requesting information from the Oregon Natural Heritage Program (ONHP). We have conducted a data system search for rare, threatened and endangered plant and animal records for your project in Township 1 North, Range 1 East, Section 18.

Eight (8) records were noted within a two-mile radius of your project and are included on the enclosed computer printout. A key to the fields is also included.

Please remember that the lack of rare element information from a given area does not mean that there are no significant elements there, only that there is no information known to us from the site. To assure that there are no important elements present, you should inventory the site, at the appropriate season.

Please note that at this time ONHP does not have comprehensive computerized records available for all anadromous fish in Oregon. I have listed below the species that may be present within the waterways contained in the project area. I have also included their listing by the National Marine Fisheries Service (NMFS). For more information on anadromous fish you may wish to contact NMFS at: 525 NE Oregon Street, Portland, Oregon 97232-2737. Please also note that the U.S. Fish and Wildlife Service now has jurisdiction over coastal cutthroat trout.

Coastal cutthroat trout (Columbia River/SW Washington)	<i>Oncorhynchus clarki clarki</i>	Proposed Threatened
Coho salmon (Lower Columbia River)	<i>Oncorhynchus kisutch</i>	Candidate
Steelhead (Lower Columbia River)	<i>Oncorhynchus mykiss</i>	Threatened
Steelhead (Upper Willamette River)	<i>Oncorhynchus mykiss</i>	Threatened
Chinook salmon (Lower Columbia River)	<i>Oncorhynchus tshawytscha</i>	Threatened
Chinook salmon (Upper Willamette River)	<i>Oncorhynchus tshawytscha</i>	Threatened

This data is confidential and for the specific purposes of your project and is **not to be distributed**.

If you need additional information or have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Cliff Alton', followed by a horizontal line.

Cliff Alton

Conservation Information Assistant

encl.: invoice
computer printout and data key

(b) (4)



KEY TO PRINTOUT

NAME AND COMMON NAME: The scientific and common name of the species.

EO-CODE (element occurrence code): Unique Heritage Program code for this occurrence. The first 10 characters are the code for the species, and the last 3 are the occurrence number.

STATE STATUS: For animals, Oregon Department of Fish and Wildlife status; **LE**=listed endangered, **PE**=proposed endangered, **PT**=proposed threatened, **SC** or **C**=sensitive-critical, **SV** or **V**=sensitive-vulnerable, **SP** or **P**=sensitive peripheral or naturally rare, **SU** or **U**=sensitive-undetermined.

FED STATUS: US Fish and Wildlife Service status. **LE**=listed endangered, **LT**=listed threatened, **PE** or **PT**=proposed endangered or threatened, **C**=candidate for listing with enough information available for listing, **SOC**=species of concern.

LASTOBS: Last reported sighting date, in the form YYYY-MM-DD

FIRSTOBS: First reported sighting date for this occurrence in the form YYYY-MM-DD

COUNTY(S): County name(s)

QUAD NAMES: Name of the USGS topographic quadrangle map(s) where the record is mapped.

DIRECTIONS: Site name and direction to site

LAT: latitude, North

LONG: longitude, West

T-R-S: Township, Range and Section, with township first, range second and section third (a space appears between range and section). 004S029E 32 = Township 4S, Range 29E, Section 32. Fractional townships and ranges are further defined in the T-R COMMENTS field.

T-R-S COMMENTS: Comments relating to township, range or section(s), e.g. SE4NE4 or SENE=SE 1/4 of the NE 1/4.

PHYSIOGRAPHIC PROVINCE: Code for physiographic province. **CR**=Coast Range, **WV**=Willamette Valley, **KM**=Klamath Mountains, **WC**=West slope and crest of the Cascades, **EC**=East slope of the Cascades, **BM**=Ochoco, Blue and Wallowa Mts., **BR**=Basin and Range, **HP**=High Lava Plains, **OU**=Owyhee uplands, **CB**=Columbia Basin.

WATERSHED: Hydrologic unit code

EO-DATA: Species and population biology - numbers, age, nesting success, vigor, phenology, disease, etc.

ANNUAL OBSERVATIONS: Summary of yearly observations

DESCRIPTION: Habitat information, e.g. aspect, slope, soils, associated species, community type, etc.

MINELEV: Minimum elevation, in feet.

SIZE: in acres, whole numbers. 0=unknown

COMMENTS: Miscellaneous comments

PROT COMM (Protection Comments): Comments regarding protectibility and threats.

MANAGE COMM: Comments on how the site is managed.

MANAGED AREA: BLM district, USFS Forest, Private Preserve, etc.

OWNER: federal, state, private, etc.

BEST SOURCE: Best source of information for this occurrence.

SOURCE CODE: Code for sources

APPENDIX 3
ECOLOGICAL SCOPING CHECKLIST

Oregon Department of Environmental Quality
GUIDANCE FOR ECOLOGICAL RISK ASSESSMENT
LEVEL I - SCOPING

ATTACHMENT 1
Ecological Scoping Checklist

Site Name	Marine Finance Corporation Property
Date of Site Visit	10/14/2004
Site Location	8444 N.W. St. Helens Rd., Portland, Oregon
Site Visit Conducted by	Jeffrey Peterson, PhD

Part 1

CONTAMINANTS OF INTEREST Types, Classes, Or Specific Hazardous Substances ‡ Known Or Suspected	Onsite	Adjacent to or in locality of the facility †
Metals	✓	
Polycyclic aromatic hydrocarbons	✓	
Petroleum constituents	✓	

‡ As defined by OAR 340-122-115(30)

† As defined by OAR 340-122-115(34)

Part 2

OBSERVED IMPACTS ASSOCIATED WITH THE SITE	Finding
Onsite vegetation (None, Limited, Extensive)	N
Vegetation in the locality of the site (None, Limited, Extensive)	N
Onsite wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other (None, Limited, Extensive)	N
Wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other in the locality of the site (None, Limited, Extensive)	N
Other readily observable impacts (None, Discuss below)	N
Discussion: No obvious contaminant impacts to plants or wildlife were observed.	

ATTACHMENT 1
Ecological Scoping Checklist (cont'd)

Part 3

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
-------------------------------------------------------	---------

Oregon Department of Environmental Quality
GUIDANCE FOR ECOLOGICAL RISK ASSESSMENT
LEVEL I - SCOPING

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
Terrestrial - Wooded	
Percentage of site that is wooded	0
Dominant vegetation type (Evergreen, Deciduous, Mixed)	P *
Prominent tree size at breast height, i.e., four feet (<6", 6" to 12", >12")	
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	
Terrestrial - Scrub/Shrub/Grasses	
Percentage of site that is scrub/shrub	0
Dominant vegetation type (Scrub, Shrub, Grasses, Other)	P
Prominent height of vegetation (<2', 2' to 5', >5')	
Density of vegetation (Dense, Patchy, Sparse)	P
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	
Terrestrial - Ruderal	
Percentage of site that is ruderal	20%
Dominant vegetation type (Landscaped, Agriculture, Bare ground)	Invasive shrubs P
Prominent height of vegetation (0', >0' to <2', 2' to 5', >5')	2' to 5'
Density of vegetation (Dense, Patchy, Sparse)	D P
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	B, Mammals
Aquatic - Non-flowing (lentic)	
Percentage of site that is covered by lakes or ponds	0
Type of water bodies (Lakes, Ponds, Vernal pools, Impoundments, Lagoon, Reservoir, Canal)	
Size (acres), average depth (feet), trophic status of water bodies	
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	
Water discharge point (None, River, Stream, Groundwater, Wetlands impoundment)	
Nature of bottom (Muddy, Rocky, Sand, Concrete, Other)	P
Vegetation present (Submerged, Emergent, Floating)	P
Obvious wetlands present (Yes / No)	
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	
Aquatic - Flowing (lotic)	
Percentage of site that is covered by rivers, streams (brooks, creeks), intermittent streams, dry wash, arroyo, ditches, or channel waterway	Willamette River is adjacent to site
Type of water bodies (Rivers, Streams, Intermittent Streams, Dry wash, Arroyo, Ditches, Channel waterway)	R
Size (acres), average depth (feet), approximate flow rate (cfs) of water bodies	P
Bank environment (cover: Vegetated, Bare / slope: Steep, Gradual / height (in feet))	V/S (30')
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	R
Tidal influence (Yes / No)	Y
Water discharge point (None, River, Stream, Groundwater, Wetlands impoundment)	R
Nature of bottom (Muddy, Rocky, Sand, Concrete, Other)	M
Vegetation present (Submerged, Emergent, Floating)	None P
Obvious wetlands present (Yes / No)	No
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	B

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
Mammals, Other)	
<i>Aquatic - Wetlands</i>	
Obvious or designated wetlands present (Yes / No)	No
Wetlands suspected as site is/has (Adjacent to water body, in Floodplain, Standing water, Dark wet soils, Mud cracks, Debris line, Water marks)	
Vegetation present (Submerged, Emergent, Scrub/shrub, Wooded)	P
Size (acres) and depth (feet) of suspected wetlands	
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	
Water discharge point (None, River, Stream, Groundwater, Impoundment)	
Tidal influence (Yes / No)	
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	

Part 4

ECOLOGICALLY IMPORTANT SPECIES / HABITATS OBSERVED

No ecologically important species or habitats are located on upland portions of the site. However, the Willamette River is adjacent to the site and is important ecological habitat.

Oregon Department of Environmental Quality
GUIDANCE FOR ECOLOGICAL RISK ASSESSMENT
LEVEL I - SCOPING

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surface waters? AND Are ecologically important species or habitats present? AND Could hazardous substances reach these receptors via surface water?	✓		
When answering the above questions, consider the following: <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in surface waters. • Ability of hazardous substances to migrate to surface waters. • Terrestrial organisms may be dermally exposed to water-borne contaminants as a result of wading or swimming in contaminated waters. Aquatic receptors may be exposed through osmotic exchange, respiration or ventilation of surface waters. • Contaminants may be taken-up by terrestrial plants whose roots are in contact with surface waters. • Terrestrial receptors may ingest water-borne contaminants if contaminated surface waters are used as a drinking water source. 			
Are hazardous substances present or potentially present in groundwater? AND Are ecologically important species or habitats present? AND Could hazardous substances reach these receptors via groundwater?	✓		
When answering the above questions, consider the following: <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in groundwater. • Ability of hazardous substances to migrate to groundwater. • Potential for hazardous substances to migrate via groundwater and discharge into habitats and/or surface waters. • Contaminants may be taken-up by terrestrial and rooted aquatic plants whose roots are in contact with groundwater present within the root zone (~1m depth). • Terrestrial wildlife receptors generally will not contact groundwater unless it is discharged to the surface. 			

“Y” = yes; “N” = No, “U” = Unknown (counts as a “Y”)

Oregon Department of Environmental Quality
GUIDANCE FOR ECOLOGICAL RISK ASSESSMENT
LEVEL I - SCOPING

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in sediments? AND Are ecologically important species or habitats present? AND Could hazardous substances reach these receptors via contact with sediments?	✓		
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in sediment. • Ability of hazardous substances to leach or erode from surface soils and be carried into sediment via surface runoff. • Potential for contaminated groundwater to upwell through, and deposit contaminants in, sediments. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may be dermally exposed during dry periods. Aquatic receptors may be directly exposed to sediments or may be exposed through osmotic exchange, respiration or ventilation of sediment pore waters. • Terrestrial plants may be exposed to sediment in an area that is only periodically inundated with water. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may have direct access to sediments for the purposes of incidental ingestion. Aquatic receptors may regularly or incidentally ingest sediment while foraging. 			
Are hazardous substances present or potentially present in prey or food items of ecologically important receptors? AND Are ecologically important species or habitats present? AND Could hazardous substances reach these receptors via consumption of food items?	✓		✓
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Higher trophic level terrestrial and aquatic consumers and predators may be exposed through consumption of contaminated food sources. • In general, organic contaminants with $\log K_{ow} > 3.5$ may accumulate in terrestrial mammals and those with a $\log K_{ow} > 5$ may accumulate in aquatic vertebrates. 			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

Oregon Department of Environmental Quality
GUIDANCE FOR ECOLOGICAL RISK ASSESSMENT
LEVEL I - SCOPING

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surficial soils? AND Are ecologically important species or habitats present? <i>No</i> AND Could hazardous substances reach these receptors via incidental ingestion of or dermal contact with surficial soils?	✓	✓	
When answering the above questions, consider the following: <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in surficial (~1m depth) soils. • Ability of hazardous substances to migrate to surficial soils. • Significant exposure via dermal contact would generally be limited to organic contaminants which are lipophilic and can cross epidermal barriers. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces by rain striking contaminated soils (i.e., rain splash). • Contaminants in bulk soil may partition into soil solution, making them available to roots. • Incidental ingestion of contaminated soil could occur while animals grub for food resident in the soil, feed on plant matter covered with contaminated soil or while grooming themselves clean of soil. 			
Are hazardous substances present or potentially present in soils? AND Are ecologically important species or habitats present? <i>No</i> AND Could hazardous substances reach these receptors via vapors or fugitive dust carried in surface air or confined in burrows?	✓	✓	
When answering the above questions, consider the following: <ul style="list-style-type: none"> • Volatility of the hazardous substance (volatile chemicals generally have Henry's Law constant $> 10^{-5}$ atm-m³/mol and molecular weight < 200 g/mol). • Exposure via inhalation is most important to organisms that burrow in contaminated soils, given the limited amounts of air present to dilute vapors and an absence of air movement to disperse gases. • Exposure via inhalation of fugitive dust is particularly applicable to ground-dwelling species that could be exposed to dust disturbed by their foraging or burrowing activities or by wind movement. • Foliar uptake of organic vapors would be limited to those contaminants with relatively high vapor pressures. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces. 			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

APPENDIX 4
SITE PHOTOGRAPHS

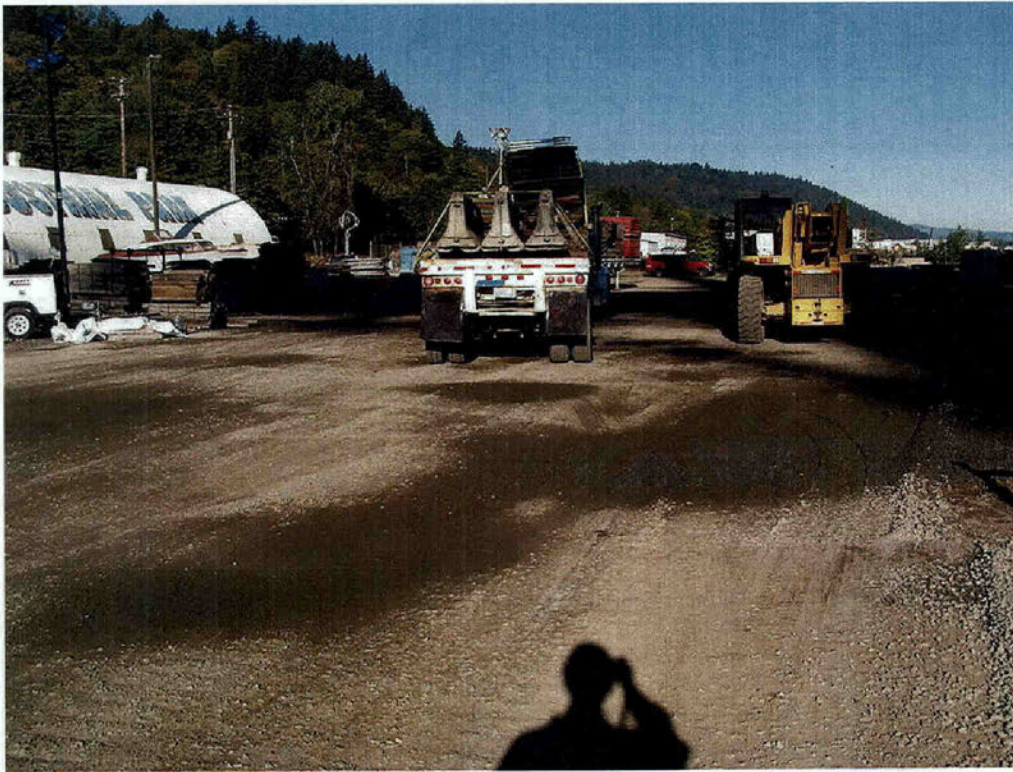


Photo 1. The photograph shows general conditions of the upland operation area north of the St. Johns Bridge. The picture was taken in the center of the site near soil sample location SS-4 and is oriented toward the northwest. Much of the upland is covered with gravel and is currently used for equipment storage.



Photo 2. The picture shows bank vegetation comprised primarily of Himalaya berry. This strip of vegetation starts from the top of the bank and extends over the bank's riprap to the Willamette River. The photograph is oriented toward the northwest and was taken near monitoring well MW-3.

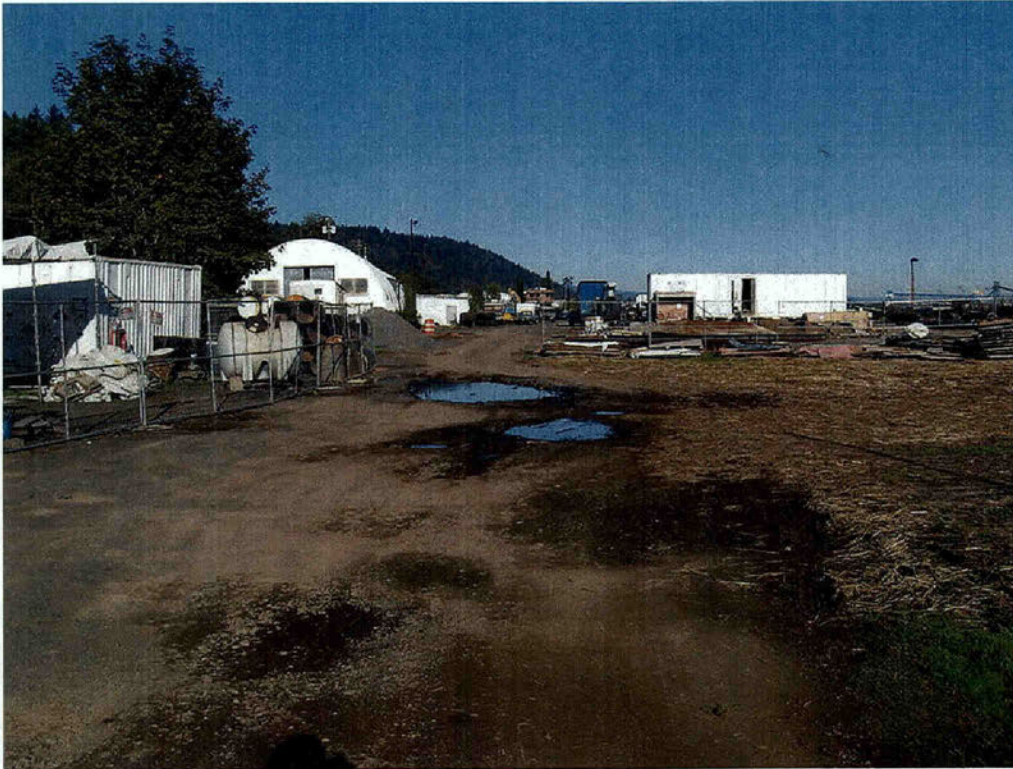


Photo 3. The photograph shows general conditions of the upland operation area south of the St. Johns Bridge. The picture was taken in the center of the site near subsurface soil sample location SB-2 and is oriented toward the northwest.



Photo 4. The picture shows vegetation near supports for the St. Johns Bridge. The on-site vegetation is limited primarily to the riverbank. The photograph is oriented toward the northwest and was taken near the same location as Photograph 3, but closer to the bank.



Photo 5. The photograph shows conditions typical of the riverbank. The bank is comprised primarily of riprap, and vegetation at the site is limited primarily to the bank. The picture is oriented toward the northwest and was taken from the walkway that leads to the Hendren tow boat dock.

APPENDIX B
RISK SCREENING

General Statistics

Data File		Variable:	Benzo(a)pyrene ug/kg
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	20	Shapiro-Wilk Test Statistic	0.737327
Number of Unique Samples	16	Shapiro-Wilk 5% Critical Value	0.905
Minimum	0.155	Data not normal at 5% significance level	
Maximum	692		
Mean	131.6218	90% UCL (Assuming Normal Distribution)	
Median	12.65	Student's-t UCL	189.5196
Standard Deviation	195.015		
Variance	38030.87	Gamma Distribution Test	
Coefficient of Variation	1.481632	A-D Test Statistic	1.196055
Skewness	1.671813	A-D 5% Critical Value	0.866357
		K-S Test Statistic	0.225146
Gamma Statistics		K-S 5% Critical Value	0.212299
k hat	0.250019	Data do not follow gamma distribution	
k star (bias corrected)	0.245849	at 5% significance level	
Theta hat	526.4477		
Theta star	535.376	90% UCLs (Assuming Gamma Distribution)	
nu hat	10.00075	Approximate Gamma UCL	272.5899
nu star	9.833968	Adjusted Gamma UCL	285.4432
Approx. Chi Square Value(.10)	4.748394		
Adjusted Level of Significance	0.0866	Lognormal Distribution Test	
Adjusted Chi Square Value	4.534577	Shapiro-Wilk Test Statistic	0.81603
		Shapiro-Wilk 5% Critical Value	0.905
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.86433		
Maximum of log data	6.539586	90% UCLs (Assuming Lognormal Distribution)	
Mean of log data	2.039019	90% H-UCL	130503.3
Standard Deviation of log data	3.430048	90% Chebyshev (MVUE) UCL	2847.796
Variance of log data	11.76523	95% Chebyshev (MVUE) UCL	3777.917
		97.5% Chebyshev (MVUE) UCL	5068.888
		99% Chebyshev (MVUE) UCL	7604.751
		90% Non-parametric UCLs	
		CLT UCL	187.586
		Adj-CLT UCL (Adjusted for skewness)	199.1472
		Mod-t UCL (Adjusted for skewness)	192.2365
REGOMMENDATION		Jackknife UCL	189.5196
Data are Non-parametric (0.05)		Standard Bootstrap UCL	185.1142
		Bootstrap-t UCL	207.9191
Use Hall's Bootstrap UCL		Hall's Bootstrap UCL	199.9882
		Percentile Bootstrap UCL	186.707
In case Hall's Bootstrap method yields		BCA Bootstrap UCL	182.1403
an erratic, unreasonably large UCL value,		90% Chebyshev (Mean, Sd) UCL	262.4418
use 99% Chebyshev (Mean, Sd) UCL		95% Chebyshev (Mean, Sd) UCL	321.6989
		97.5% Chebyshev (Mean, Sd) UCL	403.9454
		99% Chebyshev (Mean, Sd) UCL	565.5028

APPENDIX C
SITE HEALTH AND SAFETY PLAN

REPORT TRACKING SHEET		
Date	Initials	Action
9-22-04	UC	Create and revise HSP
9/24/04	ASJ	Edits
9/24/04	AMF	<p><i>Technical Review of Advanced American – Cap Oversight: ✓</i></p> <ul style="list-style-type: none"> ✓ Grammar/punctuation/follow style guide ✓ Spellcheck ✓ Check acronyms and abbreviations ✓ Formatting (update TOC, check pagination, check footers, etc.) <p>Queries inserted using Word Comment feature. Please read comments on screen in Print Layout View.</p>
10/18/04	ASJ	Additional edits.
10/19/04	AMF	<p>Correct messed-up TOC. <i>Note:</i> the Tailgate Safety Briefing Form insists on becoming a Heading 1 format; consequently, it shows up when the TOC is automatically updated. So watch out for it; remove it manually from the TOC if you have to.</p> <p>Other minor edits.</p>
10/20/04	AMF	Change date on title page to automatically update, per A. St. John.

**HEALTH AND SAFETY PLAN
IMPLEMENTATION OF SOURCE CONTROL MEASURES
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES, LLC SITE
(FORMER MARINE FINANCE CORPORATION
PROPERTY)
PORTLAND, OREGON**

Prepared for

Advanced American Construction Properties, LLC

October 20, 2004

Prepared by

Maul Foster & Alongi, Inc.
7223 NE Hazel Dell Avenue, Suite B
Vancouver, Washington 98665

Project 0100.01.01

**Health and Safety Plan
Implementation of Source Control Measures
Advanced American Construction Properties, LLC Site**

The material and data in this Health and Safety Plan were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.

Anna St. John, R.G.
Project Manager

Ulysses Cooley, R.G.
Health and Safety Coordinator

CONTENTS

ILLUSTRATIONS	vii
EMERGENCY INFORMATION SUMMARY	xi
1 INTRODUCTION	1-1
1.1 Project Background	1-1
1.2 Scope of Work	1-2
2 PHYSICAL HAZARD ASSESSMENT	2-1
2.1 Heavy Equipment and Machinery	2-1
2.2 Trenching and Excavation	2-2
2.3 Stormwater Conveyance System Installation	2-3
2.4 Fires and Explosions	2-3
2.5 Falling/Rolling Objects	2-4
2.6 Uneven Walking Surfaces	2-5
2.7 Noise	2-5
2.8 MFA Vehicular Use	2-5
3 CHEMICAL HAZARDS	3-1
4 AIR MONITORING	4-1
4.1 Explosion Hazard Action Levels	4-4
5 SAFETY EQUIPMENT	5-1
6 REQUIRED TRAINING	6-1
7 SITE CONTROL MEASURES	7-1
7.1 Exclusion Zone	7-1
7.2 Physical Hazard Control	7-1
LIMITATIONS	
REFERENCES	
FIGURE	

CONTENTS (CONTINUED)

ATTACHMENT 1 PERSONAL ACKNOWLEDGMENT SHEET

**ATTACHMENT 2 TRENCHING CONSTRUCTION AND EXCAVATING
OPERATIONS**

ATTACHMENT 3 VEHICLE SAFETY OPERATION

ATTACHMENT 4 MFA INCIDENT REPORT

ATTACHMENT 5 AIR MONITORING FORM

**ATTACHMENT 6 TAILGATE SAFETY BRIEFING
DOCUMENTATION FORM**

**ATTACHMENT 7 MFA STANDARD OPERATING PROCEDURE FOR
CONFINED SPACE ENTRY**

ILLUSTRATIONS

Following Report:

Figure

1 Route to Hospital

EMERGENCY INFORMATION SUMMARY

SITE LOCATION

AACP Site (Former Marine Finance
Corporation [MFC] Property)
8444 NW St. Helens Road
Portland, Oregon

EMERGENCY TELEPHONE NUMBERS

AMBULANCE POLICE FIRE	DIAL 911
CHEMTEC Emergency Spill Response	800-424-9300
<u>MAUL FOSTER & ALONGI, INC.</u> Anna St. John, Project Manager Ulysses Cooley, Health and Safety Coordinator	971-544-2139 800-896-4405

NEAREST HOSPITAL/EMERGENCY MEDICAL CENTER

LEGACY GOOD SAMARITAN HOSPITAL 1015 NW 22ND AVE PORTLAND, OR	(503) 229-7711
-----------------------------------------------------------------------------------	-----------------------

EMERGENCY INFORMATION SUMMARY (Continued)

EMERGENCY ROUTE TO HOSPITAL

(See attached figure)

1. Start at **8444 NW ST. HELENS RD, PORTLAND** on **NW ST HELENS RD** going toward **US-30-BYP//W/NW BRIDGE AVE/ST JOHN BRIDGE APPR**—go **4.2 mi**
2. Continue on **NW NICOLAI ST**—go **0.1 mi**
3. Bear **R** on **NW WARDWAY ST**—go **0.1 mi**
4. **NW WARDWAY ST** becomes **NW VAUGHN ST**—go **0.5 mi**
5. Turn **R** on **NW 23RD AVE**—go **0.4 mi**
6. Turn **L** on **NW NORTHRUP ST**—go **0.1 mi**
7. Turn **R** on **NW 22ND AVE**—go **0.1 mi**
8. Arrive at **LEGACY GOOD SAMARITAN HOSPITAL**

1 INTRODUCTION

1.1 Project Background

On behalf of Advanced American Construction Properties, LLC (AACP), Maul Foster and Alongi, Inc. (MFA) has prepared this Health and Safety Plan (HSP) for activities related to the implementation of source control measures at the former Marine Finance Corporation (MFC) property at 8444 NW St. Helens Road, Portland, Oregon (see Figure 1 of the Source Control Evaluation and Plan [MFA, 2004]). This HSP has been prepared to instruct MFA personnel about possible health and safety hazards associated with soil sampling and excavation oversight during implementation of source control measures at the MFC property.

The purpose of this plan is to provide information to minimize the potential for adverse exposures or injuries while performing these observation and documentation activities. A combination of personal protective equipment (PPE), engineering controls, and safe work practices will be used to minimize the risk of physical injuries and chemical exposures. The procedures and requirements contained in this plan are intended for MFA personnel performing field activities. All personnel are advised that this field project may result in exposure to chemical and physical hazards.

Site construction and associated excavation activities will be conducted by a prime construction contractor. The prime construction contractor has responsibility for implementation of the source control measures. The prime construction contractor will have the primary responsibility for site safety of its own personnel and its subcontractors. For informational purposes, MFA will endeavor to supply this HSP to contractors conducting invasive activities a minimum of two working days prior to the start of site work. All MFA, contractor, and subcontract personnel are required to read this HSP and sign the attached consent agreement, acknowledging that they have received the plan, that they have read and understand the procedures in the safety plan, and that they agree to abide by it.

All personnel who will be implementing source control measures are required to read and understand this HSP. All personnel entering the work area must sign the Personal Acknowledgement Sheet (Attachment 1). This acknowledges that they have read and understood the safety plan and agree to abide by it.

1.2 Scope of Work

MFA is the environmental consultant and, as such, will observe and document activities related to implementation of source control measures. The actual site construction activities will be conducted by AACP and its contractors.

Attachment 2, Trenching Construction and Excavating Operations, lists the general requirements for excavating and trenching operations and provides an overview for working safely around excavation equipment.

MFA's scope of work for this project includes the following activities as they relate to implementation of source control measures:

- Sample soil before excavation.
- Observe soil excavation.
- Sample soil in trenches/excavations for laboratory analyses.
- Observe and document fill placement.
- Observe, document, and sample soil stockpiles.
- Observe and document installation of stormwater management system.
- Observe and document installation of aggregate and asphalt paving related to implementation of source control measures.
- Conduct field screening to evaluate the potential for unsafe working conditions during implementation of source control measures.
- Sample stormwater after installation of stormwater management system.

2 PHYSICAL HAZARD ASSESSMENT

The following subsections describe the potential physical and chemical hazards associated with implementing this project. The control measures that field personnel must use to eliminate or minimize these hazards, such as air monitoring, personal protective clothing, and decontamination procedures, are detailed in subsequent sections of this plan.

Construction activities include a variety of physical hazards:

- Heavy equipment and machinery
- Trenching and excavation
- Fire/explosion
- Falling objects/loads
- Uneven walking surfaces
- Noise

2.1 Heavy Equipment and Machinery

The following general types of heavy equipment will be used on the site:

- Excavators (large and small)
- Bulldozers
- Hauling trucks and trailers

Potential physical hazards exist from working around excavating, backfilling, and hauling equipment. Some of the excavating equipment listed above has a large turning radius. Always be aware that a large turning radius and the height of certain equipment create blind spots for the operator. Unless necessary, do not stand near on-site heavy equipment, whether or not it is running. Other than the equipment operator, personnel are prohibited from

riding on equipment for any reason. Be alert for inattentive equipment operators at the job site. Wear high-visibility orange safety vests when appropriate.

All observation and documentation of excavation work will take place only during regular working hours. However, if it becomes necessary for any excavation-related work to occur during darkness, the excavation contractor will supply adequate lighting. The MFA employee will carry an adequate flashlight when walking near excavation activities after dark and will signal the equipment operator when approaching the work area.

For additional heavy equipment safety precautions, see the attached Standard Operating Procedure (SOP).

Physical barriers such as caution tape or orange cones may be utilized to warn vehicular traffic and unauthorized personnel of the restricted area (to be placed after consent of the prime construction contractor).

2.2 Trenching and Excavation

Under no circumstances will any MFA employee enter a trench or excavation. Also be alert to buried electric lines when conducting any activities that disturb soil. AACP personnel must be contacted by the prime construction contractor before excavating in a previously unexcavated area.

All underground utilities must be identified and marked before excavation. **ASSUME THAT ALL ELECTRICAL LINES ARE ENERGIZED.**

During excavating, the following precautions must be taken:

- Elevated equipment (e.g., backhoe, scaffolding, ladders, cranes) shall remain a distance of 10 feet away from overhead utility lines and 20 feet away from overhead power lines.
- Personnel involved in intrusive work shall determine the minimum distance from marked utilities at which work can be conducted with the assistance of a utility locator.

Personnel shall be a minimum of 2 feet from the edge of any excavation. Stockpiled soil shall be placed a minimum of 2 feet from the edge of an excavation. Visual inspections shall be conducted around all excavated areas for signs of soil cave-in or undermining. For the purposes of observing and documenting activities, the MFA Trenching and Excavation SOP is included in Attachment 2.

2.3 Stormwater Conveyance System Installation

MFA will observe and document installation and/or modifications to the stormwater conveyance system as shown on the Design Drawings.

During excavation, air monitoring for volatile organic compounds (VOCs) will be conducted according to the air monitoring procedures specified in Section 4 of this HSP. The atmosphere in all construction areas excavated to below grade and enclosed where vapors may accumulate shall be tested quantitatively for oxygen, toxic gases, dusts, vapors, mists, and fumes as often as necessary to ensure that no unsafe working condition exists. During observation of this work, MFA personnel will conduct air monitoring. MFA personnel can enter the excavated area only if it is "laid back" at a low angle. Trenching health and safety requirements are covered in this HSP.

Under no circumstances are any MFA personnel to enter the excavated area if it is constructed as such that it meets the Occupational Safety and Health Administration (OSHA) determination of a confined space. If it is not classified as a confined space and it is necessary for MFA personnel to enter the excavated area, continuous air monitoring will be conducted as specified in Section 4 of this HSP.

Any confined space entry work will require special work procedures.

2.4 Fires and Explosions

This site is considered a low risk for fire or explosion. In the case of an emergency, fire safety is the responsibility of all persons on site. The following general precautions address site-wide operations.

A fire extinguisher will be kept in the MFA field vehicle. The extinguisher will be Type ABC approved by the National Fire Prevention Association. Combination-type ABC fire extinguishers will be readily accessible to all personnel in the working area. All extinguishers will be inspected monthly and serviced yearly.

Smoking is allowed only in areas free of fire and explosion hazards; signs must be posted prohibiting smoking and open flames where these hazards exist. Various work practices are also available as preventive measures. Leaks and spills of flammable or combustible fluids must be cleaned up immediately.

See Section 4.0 for air monitoring for potential explosive atmospheres.

2.5 Falling/Rolling Objects

2.5.1 Cranes and Hoists

During construction of the stormwater system, it may be necessary to move materials into place by the use of cranes or hoists. The following rules contain provisions applicable to all construction hoisting operations performed by cranes and hoists, except personnel hoisting by cranes, which is covered by 29 Code of Federal Regulations (CFR) 1926.550(g), and material hoisting, which is covered by 1926.552(a) and (b). Provisions for underground construction performed by cranes and hoists, except personnel hoisting by cranes and material hoisting, which are covered by the Construction Standard, include the following:

- Securing or stacking materials, tools, etc., being raised or lowered in a way to prevent the load from shifting or sagging or from falling into the shaft
- Using a flashing warning light or buzzer for employees at the excavation bottom and subsurface shaft entrances whenever a load is above these locations or is being moved in the shaft
- Following procedures for the proper lowering of loads when a hoistway is not fully enclosed and employees are at the excavation bottom
- Informing and instructing employees of maintenance and repair work that is to commence in a shaft served by a cage, skip, or bucket
- Providing a warning sign at the entrance to the excavation, at the operator's station, and at each underground landing for work being conducted in the shaft
- Using connections between the hoisting rope and cage or skip that are compatible with the wire rope used for hoisting
- Using cage, skip, and load connections that will not disengage from the force of the hoist pull, vibration, misalignment, release of lift force, or impact
- Maintaining spin-type connections in a clean condition
- Assuring that wire rope wedge sockets, when used, are properly seated

Additional requirements for cranes include the use of limit switches, or anti-two-block devices. These operational aids are to be used only to limit travel of loads when operational controls malfunction, and not as a substitute for other operational controls.

2.6 Uneven Walking Surfaces

Care should be used when walking in or out of large areas of excavation. A combination of steep grades and loose material can make walking or standing on these surfaces difficult.

2.7 Noise

The effects of noise on humans include psychological effects (interference with communication by speech, job performance, and safety) and physiological effects such as temporary and permanent hearing loss. Of these, the most debilitating is permanent hearing loss. Due to the potential to work near loud equipment, all MFA personnel will be required to have hearing protection with them at all times.

2.8 MFA Vehicular Use

When operating vehicles on the site, employees will adhere to the requirements in the MFA SOP for vehicle safety operations (Attachment 3). Any traffic incidents should be reported as indicated in the MFA incident report SOP (Attachment 4).

3 CHEMICAL HAZARDS

Possible chemical hazards on the site consist of soil impacted by petroleum constituents and metals. Chemical concentrations pose a possible hazard only to aquatic receptors and not humans. The concentrations of copper and lead in two soil samples were above their respective sediment probable effect concentrations. Concentrations of benzo(a)pyrene in several surface soil samples were above sediment probable effect concentrations.

4 AIR MONITORING

During the site activities that have a potential to generate organic vapors, air monitoring for lower explosive limit (LEL) readings will be conducted and recorded every 1/4 hour in the area of construction activities where (a) source(s) of ignition are present. These readings will be recorded on the attached air monitoring form (Attachment 5). The atmosphere in all construction areas excavated to below grade and enclosed where vapors may accumulate, or in low-lying areas where vapors may accumulate, will be monitored.

A trained person must be assigned to perform all air monitoring required to determine proper ventilation and quantitative measurements of potentially hazardous gases. In instances where airborne monitoring is required by the standard to be conducted "as often as necessary," this individual is responsible for determining which substances to monitor and how frequently, taking into consideration factors such as job site location, geology, history, environmental contamination, work practice, and conditions. Measurements should be taken at all locations where organic vapors may cause an explosive condition. Air monitoring shall also be conducted and recorded at least every 1/4 hour in the MFA worker's breathing zone, which is a 1-foot-diameter sphere surrounding the worker's head.

Air Monitoring Procedures

Explosion Hazard Action Levels and Toxicity Action Levels

Instrument	Reading ^a	Action ^b	Comments
4-Gas Meter (Oxygen)	Reading of less than 19.5% oxygen	Atmospheric pressure contains at least 19.5 percent oxygen.	

Organic Vapors Toxicity Information

Chemical of Concern	OSHA PEL	OSHA STEL	OSHA IDLH	Odor Threshold	LEL (%)	IP(eV)	Other Hazard
Naphthalene	10 ppm	15 ppm	250 ppm	14.68 – 12.0 ppm	0.9	8.12	E, F, P
Note: -- - none established C - carcinogen GW - groundwater IDLH - immediately dangerous to life and health IP (eV) - ionization potential N/A - not applicable F - flammable COR - corrosive NA - not available P - poison PCB - polychlorinated biphenyl PEL - permissible exposure level SC - suspected carcinogen STEL - short-term exposure level R - reactive E - explosivity							

A record of all air quality tests (including location, date, time, substance, and amount monitored) is kept at the worksite and shall be made available to the compliance office upon request.

Air Monitoring Toxicity Action Levels for Diesel and Heavier Fuels (other than Gasoline and Jet B)

**TOXICITY ACTION LEVELS FOR
FUELS OTHER THAN GASOLINE, METHANOL, AND JET B
(in PPM)**

Instrument	Calibration Gas	Action Upgrade to Level C	Evacuate
Photoionization detector (PID)# (10.0 to 11.7 eV lamp)	Isobutylene	20	100** 200***

#Photoionization instruments do not work and shall not be used for work in high (>90%) humidity or rainy weather.

* Although the calibration gas purchased for the HNU is isobutylene, the concentration identified on the cylinder for calibration of HNUs with 10.2 eV lamps is a benzene equivalent.

** for workers wearing half-face respirators.

*** for workers wearing full-face respirators.

All instruments shall be calibrated both immediately before beginning the day's fieldwork and after work ceases for the day. Calibration and monitoring records shall be kept in the project file and provided to the operating unit Health and Safety Officer (HSO). Records shall include:

- Worker's name
- Date
- Time
- Location

- Temperature and humidity
- Calibration gas identity and concentration

a) Oxygen Requirements

Testing is to be performed to ensure that the atmosphere at normal atmospheric pressure contains at least 19.5 percent oxygen, but not more than 22 percent.

4.1 Explosion Hazard Action Levels

The chemical contaminants present on this site are ionizable (i.e., they can be detected with a PID). A Combustible Gas Indicator (CGI) should be used by MFA employees when working in a potentially explosive atmosphere, based on the presence of organic vapors.

The explosivity action level below is set to minimize risk due to flammable or explosive atmospheres. Measurements should be taken at all locations where organic vapors may cause an explosive condition (e.g., inside trenches). American Petroleum Institute procedures shall be followed for measurements in tanks or piping.

Instrument	Action Level (Evacuate)
CGI	10%

The CGI alarm must be set to sound at the action level. For this work, it is highly recommended that hexane or methane to a pentane standard be used for calibration. When measurements with a CGI indicate the presence of combustible gas levels equal to or exceeding the explosivity action level in the work area, the following actions must be taken:

1. Extinguish all possible ignition sources in the work area and shut down all powered equipment.
2. Move personnel at least 100 feet away from the work area.
3. Contact the MFA HSC. An incident report must be submitted within 24 hours.
4. At the instruction of the MFA HSC and after waiting 15 minutes for organic vapors to dissipate, the Site Safety Officer (SSO) may use the CGI to, cautiously and with prudence, approach the work site to determine the extent and concentration of organic emissions. The SSO shall not enter (or allow any personnel to enter) any area where CGI readings exceed the explosivity action level, nor shall the SSO make any approach if there is a possibility of fire or explosion.

5. Personnel may re-enter the work area only by clearance from the SSO after the cause of the emission has been determined and the source abated.
6. Prepare an incident report and submit it to the MFA HSC.

Dust Control

Ambient levels of fugitive emissions associated with construction activities will be visually monitored during work activities. If deemed necessary by the SSO, engineering controls (i.e., soil wetting) will be used to mitigate fugitive dust.

If dry soil conditions are encountered, fugitive dust emissions must be controlled to protect site workers and the off-site public. Continuing drilling or excavation activities without the use of engineering controls (i.e., soil wetting) to control fugitive dust emissions is prohibited on this site.

During site activities, fugitive dust emissions must be eliminated. If dust is visible, the following actions must be taken:

- Upgrade to Level C PPE, as described below.
- Use engineering controls (i.e., soil wetting) to control fugitive dust emissions.

Fugitive Dust Monitoring and Actions

Observation	Action ^a	Comments
Visible dust while excavating or drilling.	Cease work activities and upgrade to level C. Then use engineering controls (soil wetting) to eliminate fugitive dust emissions. Working in Level C without use of engineering controls to control dust emissions is prohibited.	If possible, work upwind. After engineering controls have eliminated dust emissions, downgrade to Level D or Modified D.

5 SAFETY EQUIPMENT

MFA will use the following safety equipment as needed on the job site:

- 4-Gas Meter
- Steel-Toed Boots—required on all job sites
- Hearing Protection—use when appropriate
- Safety Glasses—use when appropriate
- Hard Hat—required on all job sites
- Caution Tape, Traffic Cones, or Barriers
- First Aid Kit—located in MFA field vehicle
- Fire Extinguisher—located in MFA field vehicle
- Drinking Water and Gatorade or equivalent
- Respirator—Half face or full face respirator with high-efficiency purified air and organic vapor cartridges. The selection, use, and maintenance of respiratory protective equipment shall meet the requirements of established MFA procedures and recognized consensus standards (AIHA, ANSI, NIOSH), and shall comply with the requirements set forth in 29 CFR 1910.134.
- Protective Clothing—Tyvek or equivalent
- Chemical Protective Gloves—Nitrile
- Decontamination Equipment—soap and water (to wash hands and face if no facilities are available)

Each level of protection will incorporate the following equipment:

Level D: Steel-toed leather or chemical-resistant work boots, work clothes, or coveralls (long-sleeved), hard hat (if overhead hazard), safety glasses, nitrile gloves

Modified D: Same as Level D, except chemical-resistant, steel-toed boots only with addition of Tyvek coveralls (if contaminated soil is encountered), coated-Tyvek coveralls, or rain gear will be worn, as needed.

Note: Project personnel are not permitted to deviate from the specified levels of protection without the prior approval of the SSO.

Personal Protective Equipment: Field personnel will wear PPE as specified:

Level D Activities—Workers conducting general site activities where skin contact with contaminated materials is not likely will wear a hard hat, steel-toed boots, safety glasses, Nitrile gloves, and hearing protection, as needed.

Modified Level D Activities—In addition to equipment specified for Level D activities (when performing activities in which inhalation of soil dust, silica dust, or volatile organics are NOT of concern), Tyvek coveralls (if contaminated soil is encountered), coated Tyvek coveralls (if leachate is encountered), or rain gear will be worn, as needed. Hearing protection will be worn when noisy equipment is operating.

Note: Project personnel are not permitted to deviate from the specified levels of protection without the prior approval of the SSO or MFA HSC.

6 REQUIRED TRAINING

MFA employees as well as contractor employees assigned to conduct field activities covered by this procedure must be currently approved for hazardous waste fieldwork, including:

- Completion of training as required by Title 29 CFR 1910.120(e), including:
 1. Forty hours of hazardous waste worker basic instruction within the last 12 months, or
 2. Eight hours of hazardous waste worker refresher training within the last 12 months, subsequent to completion of 40 hours of basic hazardous waste worker training.
- All personnel engaging in the environmental field activities shall participate in a medical monitoring program in accordance with 29 CFR 1910.120(f). Documentation will include the following:
 1. A current medical clearance to conduct hazardous waste fieldwork and to wear a respirator
 2. Successful completion of a respirator fit test within the last 12 months for the make and model of the respirator assigned to that individual for use at that site

Copies of all required training, current medical surveillance certificates, and respirator fit test record for MFA subcontracted employees must be sent to the MFA HSC prior to entering the site.

6.1.1 Site-Specific Training and Documentation

MFA staff and contractors will review this HSP and will sign the HSP personal acknowledgment form (see Attachment 1), a copy of which will be kept on site during work activities.

An initial site-specific training briefing shall be conducted by the MFA SSO prior to commencement of work. Also, before the start of each workweek, the MFA SSO will

review health and safety practices with subcontractors. These briefings will also review the work to be accomplished and provide an opportunity for questions to be asked. These briefings shall be documented as per the Tailgate Safety Meeting Form (Appendix G).

During these training sessions, employees shall be given general instructions on the following topics:

- Personnel health and safety responsibilities
- Content and implementation of the HSP
- Site hazards and controls
- Site-specific hazardous procedures (e.g., intrusive activities)
- Medical and training requirements
- Use of direct reading monitoring equipment
- Levels of protection
- Action levels for upgrading/downgrading levels of PPE
- Emergency information, including local emergency telephone numbers and emergency response procedures
- Instruction in the completion of required forms

At a minimum, the SSO will be capable of rendering standard first aid and cardiopulmonary resuscitation. A first-aid kit, an adequate supply of fresh water, and a portable emergency eyewash fountain will be available at the work site.

7 SITE CONTROL MEASURES

The prime contractor's SSO will establish work zones. The purposes of the work zones are to restrict access to the work site to personnel who have proper safety training, and to increase worker awareness to potential contamination. Work zones will be established using caution tape or other suitable barrier.

7.1 Exclusion Zone

An exclusion zone will be set up around the work areas. Nonessential personnel will not be allowed within the observed exclusion zone. Only persons authorized by the MFA or AACP SSO will enter this zone.

7.2 Physical Hazard Control

Field operations for this project shall be conducted in accordance with the minimum safety practices (described and referenced below), which are required for all MFA employees and AACP contractors.

- A minimum distance of 20 feet will be maintained between overhead electric power lines and heavy equipment such as backhoe buckets.
- Before digging, determine if underground installations, such as sewer, water, telephone, or electrical lines are present, and if so, determine the exact locations of the lines.
- Cones and/or barricades and high visibility surveyor tape will be utilized for traffic control and for limiting access to hazardous and restricted areas.
- The excavation contractors will be responsible for maintaining a clean job site, free from hazards, and for providing safe egress from the site.
- Prior to performing maintenance on any system, all energy systems must be locked out and tagged out.

FIGURE

[illegible]

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ATTACHMENT 1
PERSONAL ACKNOWLEDGMENT SHEET

PERSONAL ACKNOWLEDGMENT

I have read, understand, and agree to abide by the provisions as detailed in this Site-Specific Health and Safety Plan. Failure to comply with these provisions may lead to disciplinary action and/or my dismissal from the work site.

MFA EMPLOYEES:

_____ Name (Printed)	_____ Signature	_____ Date
_____ Name (Printed)	_____ Signature	_____ Date
_____ Name (Printed)	_____ Signature	_____ Date
_____ Name (Printed)	_____ Signature	_____ Date
_____ Name (Printed)	_____ Signature	_____ Date

PRIME CONTRACTOR OR SUBCONTRACTOR EMPLOYEES:

_____ Name (Printed)	_____ Signature	_____ Date
_____ Name (Printed)	_____ Signature	_____ Date
_____ Name (Printed)	_____ Signature	_____ Date
_____ Name (Printed)	_____ Signature	_____ Date

ATTACHMENT 2

TRENCHING CONSTRUCTION AND EXCAVATING OPERATIONS

STANDARD OPERATING PROCEDURE EXCAVATION HEALTH AND SAFETY STANDARD

SAFETY PROCEDURES FOR TRENCH CONSTRUCTION AND OTHER EXCAVATING OPERATIONS

1.1 PURPOSE

This procedure contains an overview of the safety requirements for excavating and trenching operations and working in the area of heavy equipment. The requirements are consistent with standards established by the Occupational Safety and Health Administration (OSHA) and described in Title 29 Code of Federal Regulations (CFR) 1926.650. The detailed OSHA standard was effective in January 1990 and should be consulted before design of a shoring system, with questions regarding sloping options, or before working as a “competent person” on an excavation site.

1.2 RESPONSIBILITY

The responsibility and authority for excavating and trenching safety must be well defined before project startup. The contractor will assume responsibility for excavation safety, and Maul Foster & Alongi (MFA) will maintain safety responsibility and authority only for MFA employees. MFA employees will not serve in the OSHA-defined role of “competent person” unless specifically defined in the project scope of work and approved by the Project Manager (PM) and Management Oversight Reviewer. The PM shall ensure that the MFA field staff clearly understand the limitation of their excavation safety responsibilities and authorities.

MFA employees are responsible for understanding the general excavation safety requirements for not entering trenches or excavations and for understanding the potential hazards of working near heavy equipment.

1.3 APPLICABILITY

This procedure is applicable to all MFA projects in which trenching or other excavating operations, exclusive of borings, are entered by MFA personnel or personnel employed by firms under contract to MFA.

The best approach for avoiding the detailed trenching requirements is to perform sampling and other procedures without entry into excavations. Use of a backhoe to bring up samples, use of long-handled sampling devices, and similar techniques are recommended.

1.4 REQUIREMENTS

1.4.1 Preliminary Requirements

Certain governmental agencies require a permit to perform excavation operations.

Before digging, determine or have the client determine if underground installations, such as sewer, water, fuel, or electrical lines, are to be encountered, and if so, determine the exact locations of the lines. Information can be obtained by contacting Underground Service Alert (consult local telephone directory for toll-free number), local utility companies, and the owner of the property on which excavating operations are planned.

Trees, boulders, and other surface encumbrances, located so as to pose a potential hazard to employees, must be removed or made safe before the operation begins.

1.4.2 Placement of Excavated Materials

Excavated materials must be placed at least 2 feet back from the edge of the excavation, and precautions must be taken to prevent the materials from falling into the excavation.

1.4.3 Working in Excavations

Shoring and Sloping

Except for solid rock, trenches in which personnel are required to work must be shored or sloped if the depth of the excavation is three (3) feet or more. When a shoring system is used, it shall consist of hydraulic shores or the equivalent, with sheathing or sheet piling as needed. Trench boxes are also permitted. OSHA uses a soil classification system to

determine the allowable slopes for trenches. The shoring system must be properly designed and installed to sustain all existing and expected loads. For details on shoring and sloping requirements, consult Title 29 CFR, Subpart P, Sections 1926.650 to 1926.653.

Access

When work is to be performed in any excavation, safe access to the excavation must be provided by means of ladders, stairs, or ramps. Trenches 4 feet deep or more must have ladders spaced no less than 25 feet apart, and the ladders must extend at least 3 feet above grade.

Hazardous Atmospheres

At sites where oxygen deficiency or hazardous concentrations of flammable or toxic vapors or gases may be encountered in excavations, the atmosphere in the excavations must be tested by the site safety officer (SSO) or other qualified person before work in an excavation begins and at appropriate intervals afterward. Trenches may be classified as confined spaces and require an entry permit. If trenches are recognized as a confined space by the MFA SSO and the MFA Health and Safety Coordinator (HSC), no entry will be made into the trench by MFA personnel.

1.4.4 Inspection of Excavation

Excavations must be observed daily by the “competent person.” If evidence of potential cave-ins or slides is apparent, all work in the excavation must be suspended until necessary steps have been taken to safeguard employees.

1.4.5 Operations of Vehicles near Excavations

When vehicles or heavy equipment must operate near an excavation, the sides of the excavation must be shored or braced as necessary to withstand forces exerted by the superimposed load and the earth pressure. Stop logs or other types of secure barriers must be installed at the edges of the excavations.

1.4.6 Worker Safety around Equipment

All vehicles should be parked far enough away from heavy equipment routes to avoid possible collisions. All personnel should wear high-visibility safety vests when working

in the area of heavy equipment. Other applicable safety gear includes hard hats, safety glasses, steel-toed boots, and (if applicable) hearing protection. When working in the vicinity of heavy equipment, personnel should always be sure that the equipment operators are aware of their presence. Never attempt to cross the path of heavy equipment even if it appears to be a safe distance away. Always be aware that the height of certain equipment creates blind spots. Never stand near on-site heavy equipment.

1.4.7 Barricades and Fences

Drilling areas should be completely guarded on all sides with barricades or fences, if deemed necessary, to keep on-site personnel not involved with drilling activities a safe distance from the drilling rig. If barricades are used, they must be spaced no more than 20 feet apart and shall not be less than 35 inches high when erected. A yellow or yellow and black tape, at least 0.75 inches wide, shall be stretched between the barricades.

1.4.8 Backfilling

Excavated areas must be backfilled in accordance with the workplan as soon as is practical after work is completed, and all associated equipment must be removed from the area.

1.5 EXCAVATIONS NEXT TO EXISTING STRUCTURES

A registered engineer will review all plans for excavations next to existing structures to avoid undermining the structures and possible collapse.

ATTACHMENT 3
VEHICLE SAFETY OPERATION

MOTOR VEHICLE SAFETY

PURPOSE

The goal of this Operating Procedure (OP) is to reduce the potential for employee injury, property damage, and liability associated with the operation of motor vehicles on Maul Foster & Alongi, Inc. (MFA) business. Motor vehicle accidents cause over 40,000 deaths annually in the United States and are the number one cause of work-related death.

The risk to MFA employees is increased when in rented vehicles, away from home, focused on business issues, and under time pressures. Standard procedures will help reduce the common problem of complacency regarding motor vehicle safety.

APPLICATION

This OP applies to MFA-owned vehicles, vehicles leased or rented for MFA business, and personal vehicles when used on MFA business.

HAZARDOUS MATERIALS

The U.S. Department of Transportation regulations (HM-181) provide listings of hazardous materials and the quantities required for labeling and for placarding. MFA will not carry quantities of hazardous materials that require placards in any vehicle operating on MFA business. In general, MFA discourages the transportation of any hazardous material by MFA vehicles. However, if transportation of small quantities of hazardous materials is necessary in vehicles operated for MFA business, proper packaging, labeling, and emergency information (e.g., material safety data sheets) will be provided. Further information may be found in HS-513, Guidelines for the Transportation of Hazardous Materials.

LICENSE

All operators of vehicles on MFA business must have a valid driver's license. A Commercial Drivers License may be required for certain employees.

MFA may require employees to provide copies of their motor vehicle licenses. MFA may use insurance company computer database access to check to see if an employee's license has been suspended.

SEAT BELTS

The use of seat belts and shoulder straps by both driver and passengers is mandatory. Accident statistics clearly demonstrate the reduced risk of injury or death when wearing seat belts.

ALCOHOL/ILLEGAL SUBSTANCES

MFA employees shall not operate vehicles when under the influence of alcohol or other intoxicants. MFA employees shall prevent other employees who may be under such influence from driving. Reduction in sensory and motor skills begins well below the typical legal limit of 0.10 percent blood alcohol.

Over 45 percent of all traffic fatalities in the U.S. are alcohol-related, with blood alcohol levels at 0.10 percent or greater.

MFA may require drug testing after any motor vehicle accident that occurred while on MFA business. Further details on testing may be seen in the Human Resources Operating Procedure, PERS-107.

TRAINING

MFA employees are encouraged to take the course "Defensive Driving" sponsored by the National Safety Council. This course is available through the MFA Training Institute and is widely available throughout the U.S., Europe, and Australia.

RENTAL VEHICLES

An employee must be familiarized with a rental vehicle before it is driven. To avoid accidents because an accessory (e.g., windshield wiper) cannot be located during operation, it is recommended that the driver locate the horn, windshield wiper switch, lights, defroster, gauges, hood and gas fill door releases, and seat and mirror adjustments before the vehicle is started. Once the vehicle is started, fluid levels, wiper blades, and lights should be checked. Safety belt devices are becoming complicated and must be used correctly by the driver. The spare tire should be located, along with instructions and tools to change a flat tire. As the vehicle is driven off the lot, the driver should get acquainted

with the acceleration and braking of the vehicle. The driver must be familiar with country, state, and local traffic laws (e.g., speed limits, right turn on red, kilometers vs. miles).

The use of taxis is preferred in many international cities, due to both complex driving conditions and significantly higher accident rates.

COMPANY VEHICLES

Only authorized employees may use MFA-owned vehicles. Up-to-date records of all maintenance and repair work that has been performed on each vehicle must be kept and readily accessible. Inspection, registration, and other required documents will be kept in the vehicle or in possession of the operator. The driver must inspect the vehicle before operation for fluid leaks and levels, and tire pressure, and assess the condition of lights, windshield wipers, and horn.

GENERAL SAFETY GUIDELINES

General safety guidelines are listed below:

- Allot enough time for travel to avoid the need to hurry.
- Be well rested and alert.
- Always wear seat belts.
- Do not be aggressive; confrontations could result in violence.
- Be aware of the surroundings. Notify someone of your destination and anticipated time of arrival.
- Pack a survival kit in the vehicle for cold weather and emergencies.
- Keep doors locked.
- Do not pick up hitchhikers.
- Pull off the road in the event of a flat tire or other vehicular failure. Stay with the vehicle until help arrives.
- Drive defensively.

- Drivers with manual-dialing phones should pull their vehicles to the side of the road when phoning. Telephones should be mounted as close as possible to the driver's line of sight.

ACCIDENT REPORTING

In case of a vehicle accident, the driver must STOP. If the driver is able, emergency reflectors or flares should be set out to protect the drivers, passengers, and vehicle. The driver should get help for injured people or render first aid if he or she is qualified.

Specifics of the accident should be discussed only with the police and a supervisor. The driver should not assume any blame or responsibility, express opinions, or become involved in arguments. Any serious accident shall be reported as soon as possible by telephone to the driver's supervisor, and local reporting requirements should be followed.

An employee who is involved in an accident when on MFA business must report it by completing Form HS-102, Incident Report, and submitting it to the Operating Unit Health and Safety Officer. Additional information (e.g., accident report, citations) may be requested by the Operating Unit Manager or Corporate Health and Safety Officer.

MOTOR VEHICLE VIOLATIONS

MFA requires employees to abide by all state and local driving regulations. Should the MFA driver receive a violation notice, the employee is fully responsible for any fines.

ATTACHMENT 4
MFA INCIDENT REPORT

ACCIDENT/LOSS REPORT

*****THIS REPORT MUST BE COMPLETED IN FULL AND SUBMITTED
WITHIN 24 HOURS TO THE REGIONAL HEALTH AND SAFETY MANAGER**

Date of Accident: _____

Company: _____

Time Occurred: _____

Project Number: _____

Where Occurred: _____

Name and Location of Project: _____

PART I—PROPERTY DAMAGE/LOSS

Equipment Involved: _____

Names of Persons Involved: _____

Describe Incident/Damage: _____

Estimated Cost of Damage: _____

***Police Report must be filed on all automobile accidents and on all equipment thefts. Copy of Police Report must also be submitted.**

DRAW A DIAGRAM OF INCIDENT ON THE BACK OF THIS REPORT

PART II—PERSONAL INJURY *(Fill out only if personal injury occurred)*

Name of employee injured: _____ Age: _____ Social Security No. _____

Address: _____ Occupation: _____

What was employee doing when injured: _____

Exact location where injury occurred (station number or prominent landmark): _____

Was place of accident or exposure on job site?: _____

Describe injury: _____

How did injury occur?: _____

Did employee see a doctor or go to the hospital? _____ If yes, give name, address, ad phone number of doctor or hospital: _____

Did employee lose time? _____ If yes, how long? _____ Date returned to work: _____

Number of days employee usually worked per week: _____ Number of hours worked: _____

Date of this report: _____

ATTACHMENT 5
AIR MONITORING FORM

Maul Foster & Alongi, Inc.

AIR MONITORING RECORD

Project Title _____ Project No. _____

Site Specific Name/Location _____ Date _____ Day _____

Weather: Temp _____ Wind Direction/Speed _____ / _____ Humidity _____

[illegible]

Notes: _____

Data collected by _____
Print Name Signature

ATTACHMENT 6
TAILGATE SAFETY BRIEFING DOCUMENTATION FORM

Tailgate Safety Briefing Form

Date: _____ Time: _____ Job Number: _____

Client: _____ Address: _____

Site Location: _____

Scope of Work: _____

Safety Topics Presented

Protective Clothing/Equipment: _____

Chemical Hazards: _____

Physical Hazards: _____

Special Equipment: _____

Decontamination Procedures: _____

Emergency Procedures: _____

Meeting Attendance

- | | |
|----------|-----------|
| 1. _____ | 8. _____ |
| 2. _____ | 9. _____ |
| 3. _____ | 10. _____ |
| 4. _____ | 11. _____ |
| 5. _____ | 12. _____ |
| 6. _____ | 13. _____ |
| 7. _____ | 14. _____ |

ATTACHMENT 7

MFA STANDARD OPERATING PROCEDURE FOR CONFINED SPACE ENTRY

MAUL FOSTER & ALONGI OPERATING PROCEDURE

CONFINED SPACE ENTRY

PURPOSE

This standard operating procedure (SOP) is to help MFA personnel recognize a “confined space” and the associated potential hazards. MFA personnel shall not perform a confined space entry under any circumstances.

Entry into confined spaces always represents a potentially hazardous situation. Without proper planning, both entrants and rescuers may be at risk of death or injury. By following the approach outlined in this procedure, these risks can be minimized.

DEFINITIONS

Attendant: A person who is assigned as standby to monitor a confined space process or operation and to provide support and react as required.

Biological Hazards: Infectious agents presenting a risk or potential risk to the well-being of man, or other animals, either directly through infection or indirectly through disruption of the environment.

Blanking: Inserting a solid barrier across the open end of a pipe leading into or out of the confined space, and securing the barrier in such a way as to prevent leakage of material into the confined space.

Confined Space: An enclosed area that has the following characteristics:

- Its primary function is something other than human occupancy,
- It has restricted entry and exits, and
- It may contain potential or known hazards.

Examples of confined spaces include but are not limited to:

- tanks
- pipelines
- silos
- tank cars
- vessels
- boilers
- pits
- septic tanks
- sewers
- utility vaults
- dam galleries
- dam outlet works

Double Block and Bleed: A method used to isolate a confined space from a line, duct, or pipe by physically closing two in-line valves on a piping system, and opening a “vented-to-atmosphere” valve between them.

Engulfment: The surrounding, capturing, or both, of a person by divided particulate matter or liquid.

Entry: Ingress by persons into a confined space that occurs upon breaking the plane of the confined space portal with his/her face; and all periods of time in which the confined space is occupied.

Hazard Evaluation: A process to assess the severity of known, real, or potential hazards at, or in, the confined space.

Hazardous Atmosphere: An atmosphere that may be or is injurious to occupants by reason of: oxygen deficiency or enrichment; flammability or explosivity; or toxicity.

Hot Work: Work within a confined space that produces arcs, sparks, flames, heat, or other sources of ignition.

Isolation: A process of physically interrupting, or disconnecting, or both, pipes, lines and energy sources from the confined space.

LEL/LFL and UEL/UFL: Acronyms for “Lower Explosive Limit”/“Lower Flammable Limit” and “Upper Explosive Limit”/“Upper Flammable Limit.”

Lockout/Tagout: The placement of a lock or tag on the energy-isolating device in accordance with an established procedure, indicating that the energy-isolating device shall not be operated until removal of the lock or tag in accordance with an established procedure.

(The term “lockout/tagout” allows the use of a lockout device, a tag, or a combination of both.)

Non-Permit Confined Space: A space which, by configuration, meets the definition of a confined space but which after evaluation is found to have little potential for generation of hazards or has hazards eliminated by engineering controls.

Oxygen Deficient Atmosphere: An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enriched Atmosphere: An atmosphere containing more than 23.5 percent oxygen by volume.

PEL: An acronym for “Permissible Exposure Limit,” which is the allowable air contaminant level established by the U.S. Department of Labor, Occupational Safety and Health Administration.

Permit Required Confined Space: A confined space that after evaluation has actual or potential hazards that have been determined to require written authorization for entry.

Qualified Person: A person who by reason of training, education, and experience is knowledgeable in the operation to be performed and is competent to judge the hazards involved.

TLV: An acronym for “Threshold Limit Value.”

Toxic Atmosphere: An atmosphere containing a concentration of a substance above the published or otherwise known safe levels.

REGULATORY REQUIREMENTS

MFA will comply with the U.S. Occupational Safety and Health Administration (OSHA) Confined Space Standard (Title 29 Code of Federal Regulations (CFR) 1910.146) and any local regulations.

The American National Standards Institute (ANSI) has issued industry guidelines similar to the OSHA regulations as ANSI Z117.1-1989.

KEY ELEMENTS OF THE MFA CONFINED SPACE ENTRY PROGRAM

1. Hazard Identification. Identify and evaluate each hazard of the permit spaces, including determination of severity.
2. Hazard Control. Establish and implement the means, procedures, and practice by which the permit spaces can be entered safely.
3. Permit System. Establish a written permit system for the proper preparation, issuance, and implementation of entry permits.
4. Employee Information. Signs shall be posted near permit spaces to notify employees of what hazards may be present and that only authorized entrants may enter the permit spaces.
5. Prevention of Unauthorized Entry. Prevent unauthorized employee entry through such measures as training or by posting signs and barriers, as necessary.
6. Employee Training. Train employees so that attendants, authorized entrants, and personnel authorized or in charge of entry can work safely in and around permit space.
7. Equipment. Provide, maintain, and ensure the proper use of the equipment necessary for safe entry, including testing, monitoring, communication, and personal protective equipment.
8. Rescue. Ensure that the procedures and equipment necessary to rescue entrants from permit spaces are implemented and provided.
9. Protection from External Hazards. Ensure that all pedestrian, vehicle, or other barriers necessary to protect entrants from external hazards are provided.
10. Duty to Other Employers. Ensure that when MFA employs subcontractors, MFA provides the subcontractor with all available information on permit space hazards, on the OSHA Confined

Space Standard, and on any other workplace hazards and emergency procedures of which the contractor needs to be aware.

CONFINED SPACE ENTRY PERMIT

A permit shall be used for all confined space entries. Permits must include the following:

1. The hazards of the permit space;
2. The measures for isolation of the permit space;
3. The measures, such as lockout/tagout, equipment, and procedures for purging, inverting, ventilating, and flushing, used to remove or control potential hazards;
4. Acceptable environmental conditions, qualified with regard to the hazards identified in the permit space;
5. Testing and monitoring equipment and procedures to verify that acceptable environmental conditions are being maintained during entry;
6. The rescue and other services that would be summoned in case of emergency and the means of communication with those services;
7. Rescue equipment to be provided on site, if necessary;
8. The personal protective equipment, such as respirators, clothing, and retrieval lines, provided to ensure employee safety;
9. The identity of the permit space;
10. The purpose of the entry;
11. The date of the entry and the authorized duration (a permit may be valid for up to one year, so long as all conditions under which the permit was issued are maintained).

12. A list of the authorized entrants;
13. A list of eligible attendants;
14. A list of individuals eligible to be in charge of the entry;
15. The signature, together with the name printed or otherwise legible, of the individual authorizing the entry, verifying that all actions and conditions necessary for safe entry have been performed.

The individual authorizing the entry shall sign or initial the permit before the entry begins, but not until all actions and conditions necessary for safe entry into the permit space have been performed.

Upon completion of the entry covered by the permit, and after all entrants have exited the permit space, the individual authorizing the entry shall cancel the permit. If the permit has been issued for more than one shift, the permit will be canceled when conditions change or the permit expires.

TRAINING REQUIREMENTS AND DUTIES OF PERSONNEL

Entrants

The individuals entering the confined space must:

1. Know the hazards that may be faced during entry;
2. Recognize the signs and symptoms of exposure to a hazard;
3. Understand the consequences of exposure to a hazard;
4. Maintain contact with the attendant;
5. Notify the attendant when the entrants self-initiate evaluation of the permit space;

6. Be aware of the personal protective equipment, such as retrieval lines, respirators, or clothing, needed for safe entry and exit;
7. Be provided with the necessary personal protective equipment;
8. Use the personal protective equipment properly;
9. Be aware of the external barriers needed to protect entrants from external hazards and of the proper use of those barriers; and
10. Exit the permit space, unless it is physically impossible to do so, when:
 - The attendant orders evacuation;
 - An automatic alarm is activated;
 - The authorized entrants perceive that they are in danger.

Attendants

An attendant is stationed and remains outside the permit space(s) at all times during entry operations, and must:

1. Continuously maintain an accurate count of all persons in the space.
2. Know of and recognize potential permit space hazards, and monitor activities inside and outside the permit space to determine if it is safe for entrants to remain in the space.
3. Maintain effective and continuous contact with authorized entrants during entry.
4. Order authorized entrants to evacuate the permit space immediately when:
 - a. The attendant observes a condition that is not allowed in the entry permit;
 - b. The attendant detects behavioral effects of hazard exposure;

- c. The attendant detects a situation outside the space that could endanger the entrants;
 - d. The attendant detects an uncontrolled hazard within the permit spaces;
 - e. The attendant is monitoring entry in more than one permit space and must focus attention on the rescue of entrants from one of those spaces; or
 - f. The attendant must leave the work station.
- 5. Summon rescue and other emergency services as soon as the attendant determines that authorized entrants need to escape.
 - 6. Take the following actions, as necessary, when unauthorized persons approach or enter a permit space while entry is underway:
 - Warn unauthorized persons away from the space;
 - Request the unauthorized persons to exit immediately if they have entered the permit space; and
 - Inform the authorized entrants and any other persons designated by the employer that unauthorized persons have entered the permit space.
 - 7. No one may enter into the permit space to attempt rescue of entrants unless he/she is trained as a rescuer, emergency procedures are followed, and back-up assistance has arrived.

The Person Authorizing Entry

Individuals authorizing or in charge of entry must receive the appropriate training and be approved by the MFA Health and Safety Officer to perform the assigned duties, as follows:

- 1. Determine that the entry permit contains the requisite information before authorizing or allowing entry;

2. Determine that the necessary procedures, practice, and equipment for safe entry are in effect before allowing entry;
3. Determine, at appropriate intervals, that entry operations remain consistent with the terms of the entry permit, and that acceptable entry conditions are present;
4. Authorize entry and terminate entry whenever acceptable entry conditions are not present;
5. Serve as authorized entrants or attendants for an entry if they have the proper training.

ATMOSPHERIC TESTING

Prior to entry, the atmosphere of a confined space must be tested:

1. Oxygen content must be 19.5 to 22 percent;
2. Flammable gases must be less than 10 percent LEL; and
3. Toxic compounds must be below PELs. Compounds of concern include:
 - carbon monoxide,
 - hydrogen sulfide, and
 - any other acutely toxic compound that may be present

Atmospheric testing should be done at all levels within the confined space (from bottom to top) and should be performed as frequently as appropriate during the actual entry. The permit shall specify the monitoring requirements.

PREPARATION OF A CONFINED SPACE FOR ENTRY

Prior to entry, a confined space must be made as safe as possible. This can include:

1. Ventilating the space with fresh air for as long as possible, preferably by using forced ventilation or push/pull ventilation.
2. Locking out and tagging out all electrical control switches, mechanical controls, pumps, etc., that could release energy or contaminants into the confined space.

3. Disconnecting or capping all inlet pipes into the confined space. Double blocking and bleeding can also be used on piping.
4. Assuring safe entry via ladder, tripod, or other mechanisms.

COMMUNICATION DURING ENTRY

The system of communication must be clearly established prior to entry. Voice, walkie-talkies, handlines, phone, or any appropriate system can be used. However, it must be capable of communication rapidly and reliably in the event of an emergency.

EMERGENCY AND RESCUE PROCEDURES

Only rescuers trained in confined space rescue should attempt a rescue. The attendant generally should not attempt an entry rescue. If an emergency occurs, the attendant should summon assistance as rapidly as possible. The attendant can then attempt a non-entry rescue by use of the mechanical tripod. The attendant must be familiar with the function of all equipment used in the confined space entry.

A prearranged signal to summon assistance may be used. This could consist of a horn, flashing light, or other alarm device. Emergency communication devices must be clearly identified prior to entry. Rescue teams should practice confined space rescue at least once every 12 months. At least one member of the rescue team must maintain current first-aid and CPR certification.

Rescue teams brought in from the outside must be made aware of the hazards that they may confront in the specific confined space.

HAZWOPER SITE SAFETY AND HEALTH PLANNING PER TITLE 29 CFR 1910.120

Confined space entry permits and planning may be included as part of site safety and health plans. Such plans will require the normal MFA Health and Safety Plan approvals.

FORM

CONFINED SPACE ENTRY PERMIT
(page 1 of 2)

Project Name/No. _____

Location of Confined Space _____

Purpose of Entry and Description of Work

Possible
Hazards

Names of Authorized Entrants:

Names of Eligible Attendants:

Individuals to Be in Charge:

Rescue Service Information:

Responding Team: _____

Address: _____

Phone No.: _____

Hazard Control Measures (e.g., Ventilation)

List of Rescue Equipment Required on Site

Complied? _____ (SSO must initial prior to entry)

Complied? _____ (SSO must initial prior to entry)

Communication Procedures and Equipment

Personal Protective Equipment Required

Complied? _____ (SSO must initial prior to entry)

Complied? _____ (SSO must initial prior to entry)

Lockout/Tagout Procedures Required

Comments/Additional Information

Complied? _____ (SSO must initial prior to entry)

CONFINED SPACE ENTRY PERMIT
(page 2 of 2)

(page 2 of 2)

For continuous or periodic monitoring, record results in MFA Health and Safety report.

Entry Date _____

Duration: **Start Time** _____

End Time _____

Is hot work to be performed?

Yes _____ No _____

Individual in charge of entry approval:

Name _____

Signature

Date/Time

The individual responsible for entry verifies that all actions and conditions have been met for safe entry into the described space.

Permit Cancellation

All work is completed and all entrants are exited from the permit space.

Signature of Individual in Charge

Date/Time

Word Processing & Document Production Form

Project #: 0100.01.01 Task #: 00 Billable: ☒ Yes ☐ No

Time Sheet Description: Document production

Submitted Date & Time: 10/14/04 2:00 PM Deadline Date & Time: Fr. 10/15/04 2:00 PM

Submitted by (Your Name): _____

Word Processing Section

Computer file location: L:\Projects\0100.01 AACF\ R-eco LI.doc

New file ☒ Part of a larger document? Yes ☐ No ☐ Not determined yet

Number of Copies going OUT of office: _____ (NOT including In-house copies!!!)

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- ☐ Draft Report
- ☐ Final Report
- ☐ Proposal
- ☐ Letter
- ☐ Memo
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- ☐ Letterhead
- ☐ Plain White
- ☐ Write in Rain

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- ☐ Comb
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Additional directions (tabs, etc.): Document may be included as an
appendix in the Source Control Evaluation and Plan. Please
coordinate with Anna St. John.

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Circle one for each name:

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Keep this form with your document. Do not submit a new form for each draft.

The QA/QC form must be completed before any document is sent out of office. Senior reviewer has authority to sign off on Technical Editor and Technical Accuracy if they perform those items also. *Note: Support staff is not authorized to complete document production or distribution without a Senior Reviewer signature on this form.*

Author: Jeff Peterson Please Initial After Review Date Reviewed

Comments: _____

Technical Editor: ANNE MARIE FLEMING Please Initial After Review Date Reviewed
AMF 10/15/04

Comments: R-eco L1
QUERIES HIGHLIGHTED

Peer Reviewer: _____ Please Initial After Review Date Reviewed

Comments: _____

Senior Reviewer: Anna St. John Please Initial After Review Date Reviewed
ASJ 10/18/04

Comments: _____

I have incorporated the reviewer's comments and the document is ready for production.

PROJECT MANAGER/STAFF INITIALS: _____ DATE: _____

SAVED TO FINAL REPORT DIRECTORY: _____ DATE: _____

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NO.	REVISIONS	REVISION DATE
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1	08.16.05	
2	IN PROGRESS	

SHEET TITLE:
GRADING PLAN
NORTH

DRAWN BY: RJH

CHECKED BY:

SHEET

C2.2a

JOB NO. 2040378.00

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GRADING/UTILITY
PLAN SOUTH

DRAWN BY: R.H

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JOB NO. 2040378.00

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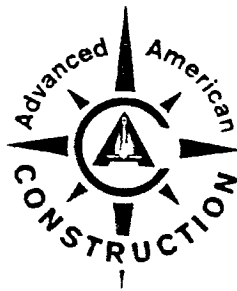
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PLAN SOUTH

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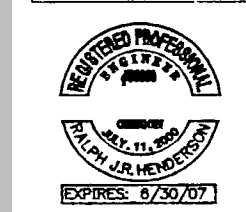
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SHEET TITLE:
UTILITY PLAN

DRAWN BY: R.JH
CHECKED BY:
SHEET

C2.3
JOB NO. 2040378.00

Anne Fleming

From: Anna St. john
Sent: Wednesday, March 01, 2006 4:04 PM
To: Anne Fleming
Cc: Debbie Glaus
Subject: FW: Closure Report Email #2
Attachments: PCS Photos.pdf; Advanced American 153.jpg; IMG_1041.jpg; IMG_1114.jpg; IMG_1130.jpg; IMG_1299.jpg; IMG_1300.jpg; IMG_1301.jpg

Same drill as previous email. Please put everything on my chair by Thurs PM. Thanks!

Anna Maria St. John, R.G.
Principal Hydrogeologist
Maul Foster & Alongi, Inc.
3121 SW Moody Ave., Suite 200
Portland, Oregon 97239

Telephone: (971) 544-2139
Cell: (b) (6)
Fax: (971) 544-2140

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From: Scott Burgess [mailto:Scottb@aadiving.com]
Sent: Friday, February 17, 2006 12:20 PM
To: Anna St. john
Subject: Closure Report Email #2

<<Advanced American 153.jpg>>

<<IMG_1041.jpg>> <<IMG_1114.jpg>> <<IMG_1130.jpg>> <<IMG_1299.jpg>>
<<IMG_1300.jpg>> <<IMG_1301.jpg>>

3/1/2006

AAC000968





PCS Photo 1



PCS Photo 2



Photo 1: Advanced American 153



Photo 2: IMG_1041



Photo 3: IMG_1114



Photo 4: IMG_1130



Photo 5: IMG_1299



Photo 6: IMG_1300



Photo 7: IMG_1301

Anne Fleming

From: Anna St. john
Sent: Wednesday, March 01, 2006 4:04 PM
To: Anne Fleming
Cc: Debbie Glaus
Subject: FW: Closure Report
Attachments: 7-22-05 Fill for Pad.jpg; 7-27-05 Bldg Pad.jpg; 8-9-05 Scrapings.jpg; 9-9-05 South Cap.jpg; 9-28-05 Capping South Lot.jpg; 10-26-05 North Fill before Asphalt .jpg; 11-2-05 North Cap with Asphalt.jpg

Hi -- Please print the email and all of these photos for me. 0100.01.02

Anna Maria St. John, R.G.

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From: Scott Burgess [mailto:Scottb@aadiving.com]
Sent: Friday, February 17, 2006 12:19 PM
To: Anna St. john
Subject: Closure Report

Anna:

1. Per the closure report material:

Regarding Mark's request, we need to pull together a bunch of information for the closure report:

- Summarize the data for the fill samples (which we have done) and a figure showing the estimated extent of where it was placed

Figure – We can draw on the plans showing under the building, and mostly is the northwest quadrant.

- Figure(s) showing the final surveyed grading plan with the location of the building (and impacted soil). The grading plan needs to show the extent of the asphalt, gravel (south of the bridge), and utilities (including the stormwater system).

I have plans showing grading, utilities, and asphalt.

- Plans for the stormwater system and photos/documentation of its installation

The plans show the storm water system – plan view. I can make copies of the details of the

3/1/2006

AAC000975

water quality vault (8' x 16") if necessary. I have pictures – see attached. More in Email #2.

- All permits and evidence of City/County approval

I have copies of all permits, including the recorded copy of the storm water O&M plan.

Let me know how to proceed, i.e. package and mail to you, meet and review etc.

2. We have 20 55 gallon drums of drilling spoils on site that we need to dispose of (should have been dumped under the building or cap – Dooh!) I talked to Kristin at Waste Management. She said to take a sample from 5 drums (composite) and have them tested for TPH and metals as we did with the scrapings. This is where you come in. If they are not hazardous waste and can be taken to Hillsboro, she can provide a container to dump the soil in and haul it. She said we can add it to Permit 9087, requesting that it be reopened. We will dispose of the drums separately.

Have a good weekend.

Scott A. Burgess, General Manager

Advanced American Construction, Inc.

415 S. McLoughlin Boulevard

(P.O. Box 1630)

Oregon City, OR 97045

Tel: (503) 650-8207

Fax: (503) 650-8230

www.aadiving.com

3/1/2006

AAC000976



Photo 1: 7-22-05 Fill for Pad



Photo 2: 7-27-05 Bldg Pad



Photo 3: 8-9-05 Scrapings



Photo 4: 9-9-05 South Cap



Photo 5: 9-28-05 Capping South Lot



Photo 6: 10-26-05 North Fill before Asphalt



Photo 7: 11-2-05 North Cap with Asphalt



Oregon

Theodore Kulongoski, Governor

Department of Environmental Quality

Northwest Region Portland Office

2020 SW 4th Avenue, Suite 400

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September 20, 2007

Kristine Koch
Remedial Project Manager
U.S. EPA Region 10
1200 Sixth Avenue
Ste 900, M/S ECL-115
Seattle, WA 98101-3140

Re: Source Control Decision
Former Marine Finance Site
8444 NW St. Helens Road
Portland, Oregon
ECSI #2352

Dear Kristine:

Thank you for providing timely comments on the Oregon Department of Environmental Quality's (DEQ's) July 17, 2007 Source Control Decision for the former Marine Finance site. Based on your comments DEQ understands that EPA's position is that the site has not been fully characterized, and that the site is a low priority for additional characterization or source control above what has already been completed. DEQ does not believe the upland site is (or is reasonably likely to be in the future) a significant source of contamination threatening the Willamette River, and will not require additional source control measures. DEQ is proceeding with issuance of a No Further Action (NFA) determination for the upland portion of the site.

DEQ prepared the following responses to EPA comments to compliment and clarify information presented in the Source Control Decision.

General Comment 1.

DEQ Response:

Attached is the Site Development Report that was inadvertently omitted from the reference section of the Source Control Decision. This document includes a summary of all information generated since September 2004 when the initial Source Control Decision was approved by DEQ following EPA review. That document was included as Appendix A to the July 17, 2007 Source Control Decision and contains a summary of all data generated up until that time. All other referenced DEQ documents date prior to 2004 and were presented in the September 2004 Source Control Decision memorandum. DEQ will forward copies of these documents at EPA's request.

General Comment #2

DEQ Response:

DEQ does concur that the site upland may have been a source of PAHs, primarily benzo(a)pyrene, detected in Willamette River sediment adjacent to the site. Copper only was detected above JSCS criteria in 1 of 23 upland surface soil samples; lead only was detected above JSCS in 1 of 33 surface soil samples. Neither copper nor lead exceeded screening criteria in 11 subsurface samples. DEQ concludes that these data demonstrate the site was not a significant source of copper or lead contamination in the site uplands, bank or the Willamette River.

The scope of work, conceptual site model and identification of Contaminants of Interest (COIs) for the Source Control Evaluation were determined prior to PCBs being identified as primary risk-drivers for Portland Harbor, and before DEQ required PCB testing at all Portland Harbor sites. Based on site history and operations, DEQ did not require analytical testing of PCBs other than for waste characterization during a drum removal.

DEQ did not require an evaluation of over-water sources, and did not make a determination on their significance as a historical source of contamination. Over-water activities probably did contribute to some sediment contamination, but given the magnitude and extent of contamination at upstream sources relative to the site, the site's contribution appears low.

General Comment #3

DEQ Response:

DEQ acknowledges this comment and has no response.

General Comment #4

DEQ Response:

Contaminants exceeding source control criteria (primarily benzo(a)pyrene) occurred across the site. The distribution of direct-push borings advanced during the 2000 work focused on source areas and contained relatively low concentrations. Subsequent wells were installed to provide better area coverage. Together these data are adequate to assess groundwater conditions and demonstrate that minimal source areas to groundwater are present.

Based on the results for the initial 3 quarters of groundwater sampling showing relatively low detections of contaminants, where detected, DEQ made the professional judgment that the groundwater quality had been adequately characterized and permitted the 4th sampling event to be omitted.

With regard to the seep, the summary of screening criteria exceedences is presented in the first bullet on the top of page 7 and again in the 3rd bullet under "*Source Control Evaluation Conclusions*". Based on the surface water and seep results, and absence of a source area, DEQ did not require monitoring well installation in this area. Furthermore, the "stand pipe" conveys water from off-site areas, and not from the site. During site development it was discovered that the standpipe was broken, and it was subsequently repaired during installation of the new storm drain system. It appears that the broken pipe was the source of the "groundwater" seep.

Based on overall non-detect to low levels of contaminants detected in groundwater, minimal exceedences of screening criteria for anthropogenic contamination, lack of apparent source areas, and lack of groundwater seeps within the upland site area, DEQ concludes that the site groundwater is not a significant contributor to contamination in the Willamette River.

With respect to the single chrysene detection in groundwater, as there are no available JSCS criteria to assess impacts to benthic organisms, it is unclear to DEQ why EPA considers it to be "suspect". Chrysene was detected in one well, in one of three sampling events. No other PAHs exceeded any screening criteria.

General Comment #5

DEQ Response:

The site has been redeveloped and virtually all outside operational areas are paved with asphalt and a new storm water conveyance system was installed (see attached photos). It is DEQ's conclusion that detections of PAHs are not from residual contamination at the site, which has been addressed by capping, and because residual soil contamination is isolated from the storm water conveyance. The basis for EPA's conclusion regarding the storm water pathway is unsupported and does not even reference the storm water data.

General Comment #6

DEQ Response:

EPA is correct in that the bank/beach erosion pathway is not directly addressed as a pathway of concern. However, 3 samples (SS-9, SS-10, and SS-11) were collected from the bank by DEQ during the Preliminary Assessment. Contaminant concentrations in SS-9 exceed JSCS criteria for copper and arsenic. Additional samples collected at depth and at a five-foot radius contained copper at concentrations less than JSCS criteria. Arsenic concentrations were determined to be within the range of naturally occurring concentrations. Based on these results DEQ did not require a soil removal in the SS-9 area. This area was paved during site development.

General Comment #7

DEQ Response:

DEQ concludes on Page 11 that the over-water pathway may have contributed sediment contamination near the site. In-water activities occurred below the ordinary high water mark identified by EPA and DEQ as the boundary between “in-water” and the site uplands, and thus a rigorous evaluation was not required by DEQ. Current over-water activities include moorage and barge maintenance. Over-water fueling is not conducted. The quantity of petroleum-based products used on site is below the limit which would trigger the Federal requirement for a Spill Prevention Control and Countermeasure (SPCC) plan.

Investigation History and Hazardous Substance Release

DEQ Response:

Six sediment samples were collected by DEQ. Because SD-1 was collected in a beach area not normally inundated by the Willamette River it was not deemed representative of Willamette River sediment and not included in the total number reported Willamette River sediment sample.

Source Control Screening and Upland Human Health Risk Assessment

Screening Results

DEQ Response:

DEQ’s Toxicology Workgroup issued a memorandum on October 28, 2002 entitled “Default Background Concentrations for Metals”. The Workgroup considered the state-wide 90% percentile value from Washington State (7 mg/kg) as a reasonable default background arsenic concentration for incorporation into risk assessments. This concentration is listed in the Washington State Department of Ecology document entitled *Natural Background Soil Metal Concentrations in Washington State* (Publication #94-115. October 1994). While some individual concentrations of arsenic in soil exceed 7 mg/kg, with some as high 13.4 mg/kg reported at the site, the mean arsenic concentration in surface soil is 5.9 mg/kg, which is below the default concentration.

DEQ concurs that the 6th bullet on Page 6 with regard to arsenic concentrations in groundwater needs clarification. Because the arsenic concentrations in site soil are within the range of expected naturally occurring concentrations DEQ concluded that the groundwater concentrations are necessarily within the range of expected naturally occurring concentrations.

Source Control Measures

Areas of Concern

DEQ Response:

Each of the samples was comprised of 3 sub-samples collected at equidistance along the circumferences of the circles defined by each of the radii.

Figure 2

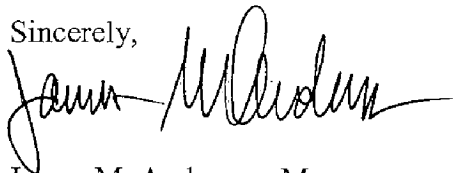
DEQ Response:

SS-8 was collected at an off-site location on property owned by the Oregon Department of Transportation to assess soil quality in a material staging area. Since it is not relevant to the former Marine Finance site it was omitted from the Source Control Evaluation.

SS-10 was a grab sample. The "SS-10" located near MW-3 is erroneous.

Please contact me at 503 229-6825 if you have questions or additional comments regarding DEQ responses.

Sincerely,



James M. Anderson, Manager
Portland Harbor Section

Attachments: Site Development Report
Site Photos (2)

cc: Mark Pugh, DEQ (w/o att.)
Dee Burch, Advanced American (w/photos only)
Anna St. John, MFA (w/photos only)
ECSI #2352 (w/photos only)

State of Oregon
Department of Environmental Quality

Memorandum

To: Keith Johnson, Lower Willamette Section Manager

Date: July 17, 2007

Through: Jim Anderson, Portland Harbor Project Manager

From: Mark Pugh, Project Manager

Subject: Source Control Decision
No Further Action Determination for Site Upland
Advanced American Construction Properties, LLC
(Former Marine Finance Site)
8444 N.W. St. Helens Road
Portland, OR
ECSI #2352

Introduction

Advanced American Construction Properties, LLC (AACP) conducted a Portland Harbor Source Control Evaluation (SCE), implemented Source Control Measures (SCMs) during site development, conducted subsequent sampling of the newly installed storm water conveyance system, and completed a human health risk screening at the above-referenced site. This memorandum summarizes the SCMs and the human health risk screening, and provides the basis for DEQ's proposed Source Control Decision (SCD) and recommendation for a "conditional no further action" (CNFA) determination for the site upland.

DEQ's proposed SCD is that recent SCMs implemented by AACP have either controlled upland sources of contamination or contaminant transport pathways, and that the upland site does not pose a significant threat to the Willamette River. The proposed CNFA pertains to the site upland, and indicates AACP has conducted adequate investigation, cleanup and risk evaluation to demonstrate the site is protective of human health, as required under Oregon State Statutes. As a condition of the CNFA DEQ will require maintenance of the cap, and an institutional control preventing activities that could affect cap integrity unless they are approved by DEQ. These controls will be documented in an Equitable Easement and Servitude (EE&S) to be issued by DEQ and recorded with the deed by the County. Maintenance of the cap is also a key element of the SCM completed at the site.

AACP entered into a prospective purchaser agreement (PPA) for the property with the Oregon Department of Environmental Quality (DEQ) on November 16, 2004. To identify the scope of work for the PPA, DEQ requested a screening-level risk assessment (RA) and a SCE (MFA, 2004a).

In a letter dated August 24, 2004, the DEQ concurred with the conclusions of the RA and also determined that sufficient data were available to conduct a Portland Harbor SCE (DEQ, 2004). A SCE and Plan was completed (MFA, 2004b) and was approved by DEQ as the scope of work for

the PPA. DEQ completed a Source Control Decision memorandum dated September 30, 2004 and provided the United States Environmental Protection Agency (EPA) 30 days to review and comment on the proposed SCMs. The previous memorandum is attached for reference and contains the majority of the site investigation results referenced below. No comments on the proposed SCMs were received from EPA. The SCMs were implemented in summer 2005 and documented in a Site Development Report (MFA, 2006). The final task required by DEQ was post-SCM storm water monitoring of the newly installed storm water collection system. The last sampling event was completed in May 2007 (MFA, 2007).

Site Description and Operational History

The 7.46-acre site is located adjacent to river mile (RM) 6 along the Willamette River in Portland Harbor (Figure 1). The Portland Harbor was added to the National Priorities List (NPL) under the Comprehensive Environmental Response, Compensation, and Liability Act and National Oil and Hazardous Substances Contingency Plan on December 1, 2000.

The St. Johns Bridge passes over the site, and approximately two-thirds of the property is located north of the bridge (Figure 2). The property is flat to gently sloping toward the river. The site is located in section 11, township 1N, range 1W, Willamette Meridian, and includes tax lots 500, 600, and 700 on Map #11 1N 1W; 300 on Map #11 1N 1W AC; and 100, 101, 500, 600, and 700 on Map #11 1N 1W DA.

Historically, a number of businesses that may have handled hazardous substances operated at the site (Jacobs, 2000). Since the 1920s or earlier, the site has been used by various marine construction and tow boat/barge companies (PBS, 1993). In the past, the site also had a warehouse in the south part of the site, as well as smaller buildings including offices, a tavern, and a private residence. Between 1936 and 1940, the area was built up with fill material, followed by construction of two buildings prior to 1957. Most of the site was leased to two metal salvage companies from 1988 to 1993.

Three underground storage tanks (USTs) were located immediately east of and adjacent to the southern building and were used by GCC (Figure 2). Two USTs, a 10,000-gallon tank and a 20,000-gallon tank, stored diesel fuel, and a third 5,000-gallon tank stored gasoline. A fuel pumping island was near the USTs by the south building. A fuel line also led to the dock north of the bridge and may have supplied fuel for river vessels and/or been a supply line for the USTs. The USTs and associated impacted soil were removed in 1988.

AACP acquired the property in 2004 and constructed a new building that was occupied in May 2006. The current configuration of the site is shown on Figure 3. AACP utilizes the entire site. None of the yard is leased to any other tenant for any other use. Site operations include barge and tug moorage, on-land and in-building equipment storage and maintenance, machine shop, and offices for support of off-site construction projects throughout the western United States. Hendren Towboat leased dockspace until September 1, 2005.

Regulatory History

UST file #11378: Three steel USTs were decommissioned at the site by REH, Inc. in 1988: one 20,000-gallon diesel UST, and a 10,000 and 5,000-gallon UST with unspecified contents. The location of the tanks and their condition at the time of decommissioning is unknown.

LUST file #26-88-0046: A release of diesel to soil associated with the UST decommissionings was reported on August 8, 1988. A soil removal was completed and DEQ's UST Program issued a no further action letter on February 17, 1989.

EPA ID #ORQ000005892: One time disposal of abandoned paint waste from a "dumping area" (notification dated March 20, 1997). The site's 1997 hazardous waste generator Annual Report indicates that the facility no longer generates hazardous waste.

In a January 1998 spill report, the U.S. Coast Guard (USCG) observed numerous drums of oily rags, antifreeze, etc., with housekeeping and storage concerns at the Hendren Tow Boat site.

Investigative History and Hazardous Substance Releases

REH, Inc. removed the three USTs from the site in 1988. Contaminated soil was excavated from the tank pits to depths of 15 to 26 feet. Additional impacted soil was excavated along the former product lines. The DEQ UST Program issued a no further action letter on February 17, 1989.

In 1997, the USEPA conducted a study of sediments of the Lower Willamette River (USEPA, 1998). As part of this study, a subsurface sediment sample was collected adjacent to the subject site, and surface sediment samples were collected both upstream and downstream of the site (Figure 4). Concentrations of several chemicals (e.g., polycyclic aromatic hydrocarbons [PAHs]) were elevated above apparent baseline values for the Portland Harbor in the sediment sample collected adjacent to the site.

In September 1999, DEQ's Site Assessment program recommended that the site owner, Marine Finance Company (MFC), conduct an Expanded Preliminary Assessment (XPA) at the facility. DEQ and MFC signed a voluntary agreement in April 2000, but MFC was unable to meet the terms of the agreement. DEQ declared the site an Orphan project in July 2000 after determining that MFC was "unwilling" to investigate or clean up the site.

In August 2000, DEQ retained Jacobs Engineering (Jacobs) to perform an XPA that included collecting six groundwater samples, five Willamette River sediment samples, 13 soil samples, and two surface water samples (Figure 2). Samples were collected at locations where contaminants may have been released, based on information regarding historical site operations. Soil, sediment, groundwater, and surface water samples were analyzed for metals, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and butyltins. DDT group compounds were not identified as a contaminant of interest (COI) based on a review of historic site use.

TPH was detected in surface soil at most sample locations. Concentrations of several metals in soil were elevated above natural background levels at several locations. Two VOCs were

detected in surface soil samples, but none were detected in subsurface soil. Several SVOCs were detected in both surface and subsurface soil. PCBs were not detected in any soil sample. Tri-*n*-butyltin (TBT) was detected at several locations. Also, several chemicals were detected in groundwater grab samples at concentrations above the respective USEPA Region 9 PRGs for tap water (Jacobs, 2000). PAHs were detected in sediment at elevated levels orders of magnitude higher than detected in site soil.

In May 2001, DEQ removed abandoned waste containers, batteries, and drums (containing oily liquids) from the site.

Based on a review of the Jacobs investigation results, the DEQ identified additional tasks necessary to complete characterization of the nature and extent of chemical impacts to the upland part of the site. These tasks included: 1) soil sampling from two or more discrete depth intervals at locations with the highest contaminant levels in surface soil (SS-2, SS-7, SS-9) and from the former UST location; 2) quarterly monitoring of groundwater (one-year minimum) at approximately six locations across the eastern part of the site to assess shallow groundwater contaminants potentially discharging to the Willamette River; and 3) collection of additional surface soil samples from approximately ten locations to better characterize the lateral extent of surface contamination. In April 2003 a phased investigation of soil and groundwater was initiated to address DEQ comments (SS-12 through SS-21 on Figure 3). A Phase II ESA report presented analytical results of subsurface soil samples and the first round of groundwater monitoring (GeoDesign, 2003).

Diesel- and heavy-oil-range hydrocarbons were detected in two of the eight subsurface soil samples analyzed. Reported concentrations were below the DEQ UST Program Level 2 Soil Matrix Cleanup Standard. Three subsurface soil samples were analyzed for VOCs, and 2-chlorotoluene was detected in one of the samples. Eleven subsurface soil samples were analyzed for PAHs, and several PAHs were detected in soil samples. Of the metals analyzed in soil, only arsenic and lead were detected at concentrations above a human health screening concentration (GeoDesign, 2003).

Six groundwater monitoring wells were installed at the site to characterize chemical concentrations in shallow groundwater that may discharge to the Willamette River (MW1-MW-6; see Figure 2). The wells are screened in sand with occasional gravel between 5 feet and 30 feet below ground surface (bgs). The initial groundwater monitoring event was conducted in April 2003 (GeoDesign, 2003). The highest detected concentration of total arsenic in groundwater was above the tap water PRG, and the highest total lead concentration in groundwater was above a potentially applicable DEQ RBC. Several PAHs were detected at concentrations below potentially relevant RBCs and PRGs. VOCs were not detected in groundwater samples (GeoDesign, 2003).

GeoDesign conducted additional groundwater sampling events in July 2003 and April 2004. Additional surface soil samples were collected in August 2003.

The Lower Willamette Group collected sediment samples near the site as part of their Remedial Investigation (LWG, 2007). Two initial areas of potential concern (iAOPCs) were identified adjacent to the site (Figure 5, Figure 6). iAOPC 8 was identified based on detections of PCBs;

iAOPC 9 was identified based on PCB and total DDT detections. PCBs have not been detected in the site upland and were not identified as a contaminant of potential concern for the source control evaluation. As stated above, DEQ did not identify DDT group compounds as a COI for the XPA or source control evaluation.

Source Control Screening and Upland Human Health Risk Screening

This section summarizes the source control and human health risk screening methodology and results as presented in DEQ's 2004 Source Control Decision Memorandum included as Appendix A. The subsequent *Source Control Measures* section below discusses the source control measures implemented in 2005 and 2006.

For the SCE risk screening the following potential pathways to the Willamette River were evaluated by comparing media concentrations to draft joint EPA/DEQ Source Control Strategy screening criteria available in 2004:

- Migration of contaminated soil particles to the Willamette River through overland runoff
- Discharge of impacted shallow groundwater to surface water of the Willamette River
- Direct discharge from a storm drain pipe in the northwest corner of the site (see Figure 2), and migration of surface water from the groundwater seep area to the Willamette River.

Human health risk was evaluated by screening media concentrations to appropriate risk-based screening concentrations for human exposure pathways, including:

- Direct contact with soil (0-3 feet; occupational worker)
- Direct contact with soil (0-3 feet; construction worker)
- Direct contact with soil (0-15 feet; excavation worker)
- Ingestion of tap water
- Direct contact with groundwater (excavation worker)

Surface water and shallow groundwater concentrations were compared to Ambient Water Quality Criteria (AWQC; fresh water-chronic and fish consumption AWQC) and US EPA Region 9 Preliminary Remediation Goals (PRGs) for groundwater. In the absence of AWQC, DEQ Screening Level Values (SLVs) for fresh surface water were used for screening.

In subsequent contaminant screening conducted in 2005, shallow soil (< 1 foot) concentrations were compared to probable effects concentrations for suspected sediment (PECs; MacDonald and others, 2000), and DEQ SLVs for the suspected Portland Harbor bio-accumulative chemicals (Tables 1, 2). Benzo(a)pyrene was the only one of these suspected bioaccumulative chemicals that exceeded screening levels. DEQ Risk-Based Concentrations (DEQ, 2007) and/or EPA Region 9 Preliminary Remediation Goals (PRGs) were used to screen contaminants for the human health risk evaluation.

Screening Results

A summary of the Source Control and Upland Human Health risk screening is as follows:

- Concentrations of arsenic in almost all surface and subsurface soil samples were above USEPA Region 9 industrial soil PRGs, but were consistent with naturally occurring concentrations in soil at other locations in the region.
- The concentration of copper in surface soil from sample location SS-9 and the concentration of lead in soil from sample location SS-21 were above their respective sediment PECs.
- Heavy-oil-range TPH concentrations were above DEQ's UST Program Level 2 Soil Matrix Cleanup Level (i.e., 500 mg/kg) for diesel or other non-gasoline petroleum hydrocarbon contamination in surface soil samples from SS-6 and SS-12, and in the subsurface soil sample from SB-4. No DEQ RBCs are available for heavy-oil range TPH.
- Concentrations of benzo(a)pyrene (BaP) in surface soil from sample locations SS-7, SS-12, SS-16, and SS-21 were above the DEQ RBC for occupational workers and the DEQ sediment bioaccumulation SLV. However, the site-wide exposure point concentration derived from the 90% Upper Confidence Limit (UCL) of the mean concentration of BaP in surface soil is below the industrial PRG. As a result, BaP did not appear to pose unacceptable risks to workers. However, as described below, impacted soil was removed for the purposes of source control to the Willamette River in all areas where BaP exceedences were observed with the exception SS-16. SS-16 is located further than 100 feet from the river and did not require removal by DEQ because soil at this location is not expected to be susceptible to transport to the river through sheet runoff.
- Concentrations of BaP exceeded the sediment bioaccumulation SLV at sample locations SS-7, SS-12, SS-15 through SS-18, SS-20, and SS-21.
- Concentrations of total and dissolved arsenic in some groundwater samples collected from monitoring wells MW-2 through MW-5 were above the water quality criterion for fish consumption and the Region 9 tap water PRG. The concentrations of arsenic in groundwater appear to be consistent with naturally occurring concentrations.
- The concentration of chrysene in the groundwater sample collected from MW-4 in April 2003 was above the water quality criterion for fish consumption. Total concentrations of several metals in this sample were also elevated, and it is possible that this particular sample had an unusual number of suspended particles. Chrysene was not detected in groundwater samples from MW-4 in subsequent sampling events, and this PAH was not detected in samples from other on-site monitoring wells. Given that chrysene was reported only in one sample from a single groundwater monitoring well, it appears unlikely that the nature and extent of chrysene impacts to groundwater are sufficient to cause unacceptable risks to people that may consume fish caught in the Willamette River near the site. Waterborne chrysene concentrations at the point where water column biota may be exposed to the chemical are expected to be substantially reduced relative to concentrations in groundwater due to natural attenuation processes and mixing with ambient river water.

- With the exception of barium, the concentrations of metals in the stormwater pipe discharge and the seep are below DEQ aquatic biota SLVs and human health water quality criteria for consumption of aquatic organisms. Barium occurs naturally in soil and water of the region and is unlikely to cause adverse effects to aquatic organisms exposed to discharges from this pipe.

Source Control Evaluation Conclusions

Based on the results of the screening, the following conclusions were drawn:

- Concentrations of BaP in surface soil samples collected at various locations across the site are greater than the DEQ SLV for bioaccumulation in sediment. Also, copper and lead were each detected above sediment PECs in surface soil at one location. These risk screening results suggest prompted a recommendation for management as part of the Source Control Plan.
- Given the general low frequency of detection and the relatively low concentrations, it is unlikely that site-related chemicals in groundwater could migrate to surface water or sediment of the Willamette River at concentrations that could pose unacceptable risks to aquatic biota. No risk management actions were proposed for groundwater.
- Discharges from the storm water pipe and the ponded seep water did not appear to have impacted surface water or groundwater. The pipe appears to drain a relatively small, unimpacted area, and received the majority of storm water from adjacent, upgradient properties. No risk management actions were deemed necessary for storm water or surface water.
- As discussed above, heavy oil-range and diesel-range hydrocarbon concentrations were detected infrequently in site soil at low to moderate concentrations. Because there are no established source control screening criteria for these compounds, DEQ uses constituent concentrations (e.g., PAHs, selected VOCs) to evaluate potential risk. Given that VOCs were not detected above screening levels, the only PAH detected above screening levels (BaP) was addressed in the source control plan as discussed below, and that petroleum hydrocarbon-impacted soil is limited in extent and is of low to moderate concentrations, DEQ concluded that hydrocarbons present in soil did not present a significant risk to the Willamette River through storm water runoff or erosion.

Based on these findings, the soil to sediment pathway was identified as the only potentially significant pathway of concern to the Willamette River. The source control actions described below were designed and implemented to mitigate this pathway, and to address future storm water management during construction and site operation.

Source Control Measures

SCMs to address soil to sediment pathway were proposed in the Source Control Evaluation and Plan (MFA, 2004b). The SCMs address shallow soil with concentrations exceeding the source control criteria that are within 100 feet of the Willamette River, because it is most susceptible to

transport to the river. DEQ prepared a Source Control Decision memorandum approving the proposed SCMs. DEQ forwarded the memorandum to the U.S EPA and provided a 30-day comment period. No comments were received from EPA.

Additional data were collected in April and May 2005 to refine the extent of soil requiring a SCM (MFA, 2005). The SCMs were implemented in summer 2005 as described below. SCMs and site development activities are summarized in the *Site Development Report* (MFA, 2006).

Areas of Concern

Surface soil exceeding the source control criteria, as identified in the risk screening and the Source Control and Evaluation Plan (SCE Plan) (MFA, 2004b), were targeted for SCMs to mitigate potential impacts to the river and/or site workers. Figure 3 shows a summary of the SCMs conducted at the site.

Before excavation, sample locations where the source control criteria were exceeded (i.e., sample locations SS-7, SS-9, SS-12, SS-15 through SS-18, SS-20, and SS-21) were resurveyed and staked by a surveyor licensed in Oregon. MFA collected soil samples in April and May 2005 to delineate the actual vertical and horizontal extents of impacted soil.

Samples were collected using at radii of 5 feet, 10 feet, and 20 feet of the sample location to determine the lateral extent of impacts. Samples were collected at ground surface, at 1 foot below ground surface (bgs), and at 2 feet bgs to determine the vertical extent of impacts in erodible soil within 100 feet of the top of the riverbank.

If detected concentrations exceeded source control screening levels, the deeper and/or distal samples were analyzed. This process was repeated until the vertical and lateral extents of the impacts had been delineated. Tables 1 and 2 show the BaP, and copper and lead sampling results, respectively. Table 3 identifies areas where SCMs were required, and the basis for the SCM.

Generally, detected concentrations of benzo(a)pyrene (BaP) exceeded the source control screening levels, with some exceeding human health RBCs for occupational workers based on direct contact with soil, but did not exceed RBCs for construction or excavation workers except for one sample near SS-15 (SS-15-30Dup) and one sample near SS-20 (SS20-10-1). Detected concentrations did not exceed hot spot levels for human receptors, based on 100 times the RBC (i.e., 27,000 ug/kg; Table 1). Copper and lead concentrations were below the source control screening levels (see Table 2).

Soil Excavation and Placement

Upland soil around SS-7, SS-12, SS-15, and SS-16 were excavated and placed under the footprint of the future building where future occupational workers would not contact the material, and where it is not susceptible to erosion and transport.

Soil within a 30-foot diameter of SS-7 was excavated to 1 foot bgs. Soil within a 50-foot diameter of SS-12 and SS-15 was excavated to 3 feet bgs. Approximately 535 cubic yards (cy) were excavated and placed as a 3-foot-thick lift under the west side of the building slab (Figure 3). The SS-15 and SS-16 excavations were backfilled with clean, imported fill, graded, and

paved. Locations SS-7 and SS-12 (below the top of the bank in the former ferry landing area), SS-17, and SS-18 were backfilled, graded, and capped with at least 5 feet of imported fill and gravel. The areas around SS-20 and SS-21 were capped with imported fill and gravel, thereby eliminating exposure pathways for ecological and human receptors.

Site Development

AACP developed a solid waste management plan (MFA, 2004b) to provide protocols for assessing and managing potentially contaminated soil generated during site grading and development. The plan was prepared to ensure that excavated areas were not re-contaminated and/or potentially impacted soil from other areas of the site were not placed within the 100-foot buffer zone with the Willamette River. In addition, AACP implemented erosion control measures during site grading and excavation in accordance with a DEQ 1200C National Pollutant Discharge Elimination System (NPDES) permit. Six groundwater monitoring wells installed at the site in 2003 were decommissioned with DEQ approval. Wells were decommissioned by overdrilling, removing annular materials, and backfilling the holes with grout and bentonite chips hydrated with potable water. Well materials were disposed of at the Hillsboro Landfill.

Soil disturbed during site development was field-screened for petroleum-like odor, staining, sheen, or elevated photoionization detector readings. Representative samples of any apparently impacted soil were collected and analyzed to assess appropriate reuse or disposal options.

During site grading the uppermost vegetation and soil layer was removed and stockpiled for subsequent sampling and analysis. Due to detections of petroleum hydrocarbons approximately 816 tons of soil were disposed off-site at the Hillsboro Landfill.

Between July 20 and September 20, 2005, AACP imported approximately 8,000 cubic yards of fill from the former Columbia Villa property in north Portland to be used as needed for on-site fill. One composite sample per every 1,000 cy of the fill was analyzed for PAHs and total metals. Analytical results showed that PAHs and metals were below the DEQ RBCs for human health and source control screening criteria. Based on these results, the DEQ determined that the fill was clean and suitable for use under the building footprint and across the site to reach final grade.

Utility Installation

Figure 3 shows site utilities. Partial grading of the site began on July 20, 2005. However, final grading and preparation for utilities did not begin until the building permit was issued on August 8, 2005. A plumbing permit was issued for sanitary, storm, and water lines on August 17, 2005. A plumbing permit for fixtures was issued on August 25, 2005.

The site is served by Portland General Electric from a power pole located on the site just east of the Portland and Western Railroad ROW, 72 feet south of the property's northern edge (Figure 3). From this point, the line travels south along the railroad ROW underground for approximately 100 feet to the electrical room that serves the building. Three underground lines emanating from the southeast corner of the building serve the docks under the asphalt and gravel parking lots and the outside maneuvering and storage areas.

A 15-inch storm sewer line was installed in 2005. Two oil/water separator vaults installed under the south building canopy are tied into the line, as are the gutters and seven catch basins located around the site. The main 15-inch storm line passes through an 8-foot x 16-foot storm filter before connecting to the pre-existing 15-inch outfall in the Willamette River at the northeast corner of the property.

A 6-inch sanitary line extends approximately 180 feet from the building across the northwest parking lot and connects to a COP manhole at the northwest corner of the property.

Site Paving

Most of the site was raised above the floodplain level, which required placement of up to 5 feet of imported fill in some areas. Approximately half of the AACCP site is paved with asphalt or covered by the building. Most of the paving is covered with “heavy-truck” paving consisting of two 4-inch layers of asphalt over a 6-inch layer of base aggregate, except for the parking stall area in the north portion of the site, which is covered with a 2-inch layer of asphalt over a 4-inch layer of base rock. The rest of the site is covered with at least 6 inches of 3/4-inch-0 gravel. The first lift of asphalt was placed on October 27, 2005. The second lift occurred in early 2006, before the Certificate of Occupancy was issued on April 18, 2006. Building construction began in August 2005 after the permit was obtained. Pile driving, foundation work, and building construction began in August 2005 and continued until April 2006. A Certificate of Occupancy was issued on April 18, 2006. AACCP began full operations in the building in May 2006.

Building Construction

Building construction began in August 2005. Pile driving, foundation work, and building construction began in August 2005 and continued until April 2006. A Certificate of Occupancy was issued on April 18, 2006. AACCP began full operations in the building in May 2006.

Post-SCM Storm Water Monitoring

Storm water monitoring was required following installation of the storm drain system to ensure that the new system did not contribute significant contamination to the Willamette River. DEQ initially required four storm water monitoring events. However, based on the results of the first 3 events, which showed relatively low concentrations, DEQ did not require the fourth sampling event. Storm water results for total metals, PAHs, and petroleum hydrocarbons are shown on Tables 4, 5, and 6, respectively.

Arsenic in groundwater was either detected above, or its detection limit was above its human health screening criteria. However, arsenic is known to be elevated above its PRG in Portland area soils. Site arsenic concentrations range from 1.10 mg/kg to 13.3 mg/kg and appear to be within the range of expected naturally occurring concentrations. The copper and zinc concentrations in the 2007 sampling event marginally exceed their ecological screening criteria by a factor of 2 or less. A number of PAH detection limits and detected concentrations exceed their respective screening criteria by less than a factor of 10. BaP, the primary PAH of concern for the source control evaluation was not detected. Total petroleum hydrocarbons as gasoline, diesel, and lube oil were either not detected, or were detected at less than 1 milligram per liter (mg/L).

The PAH and TPH results appear consistent with runoff from the newly installed asphalt pavement that covers a majority of the site. The relatively low-level exceedences of copper and zinc in one storm water sample do not warrant further investigation or evaluation.

Summary and Conclusions

AACP conducted a SCE to identify potentially complete exposure pathways to the Willamette River. Potential surface soil erosion from the site to the Willamette River was identified as the only pathway of concern.

A DEQ-approved SCM was conducted to address soil with concentrations above screening criteria for the protection of sediments. Imported fill and soil in other areas of the site that were excavated, or otherwise disturbed during development were field screened, characterized, and managed in accordance with solid waste rules. A human health risk screening also was conducted to ensure that the site is protective of site workers.

Sampling of the storm water system showed low levels of PAHS, metals and petroleum compounds, although some concentrations exceeded screening criteria. However, given the relatively low level exceedences DEQ has concluded that further action is not required.

Two sediment iAOPCs adjacent to the site have been identified by the LWG. However, based on upland soil data and/or distribution of sediment contaminants it does not appear that the site upland was or is a significant contaminant source to Willamette River sediment. Overwater activities may have contributed to sediment contamination near the site. However, sediment adjacent to nearby upstream sites contain much higher concentrations than observed near the site and is likely a significant contributor to contamination observed near the site.

Recommendation

DEQ has reviewed and approved the SCE and SCM implemented at the site. Upon review of the site development report and post-SCM storm water evaluation, DEQ has determined that the completed source control measures have effectively mitigated the potentially significant contaminant pathways to the Willamette River, and that residual contamination does not present a significant risk to human health or the environment.

Based on a review of site information DEQ has determined that a conditional no further action (CNFA) is warranted for the site, provided that certain engineering and institutional controls are implemented and maintained. To ensure that the site remains protective of human health, DEQ will require the following conditions for the proposed NFA determination:

- DEQ will require that the existing building be maintained over the soil disposal cell to prevent direct contact with soil at the site and mitigate erosion via wind or storm water runoff.
- If the building floor is to be removed or otherwise disturbed during future site development, DEQ is to be notified. Given that the building is new construction it appears unlikely that it will be renovated or otherwise disturbed in the foreseeable future.

In the event the building is to be disturbed, DEQ oversight cost for such activities are recoverable under terms of the existing PPA.

- In the event any soil is disturbed at the site it will be properly characterized and managed according to all applicable local, County, State and Federal regulations.

The conditions of the proposed CNFA will be documented in an Equitable Easement and Servitude (EE&S) to be filed with Multnomah County.

Issuance of the conditional CNFA would be made following consideration of public comments in response to a notice filed in accordance with Oregon Revised Statute, ORS 465.320, and Oregon Administrative Rules, OAR 340-122-100.

Because contaminant concentrations above risk-based screening levels will remain at the site, DEQ will require that the site remain listed on the Confirmed Release List (CRL) and Inventory of Hazardous Substance sites.

The proposed CNFA finding is consistent with Oregon Revised Statutes (ORS) 465.200 through 465.455 and Oregon Administrative Rules (OAR) Chapter 340, Division 122, Sections 010 to 115. I request you approve my recommendation to conduct a public comment period. In addition, I request you forward this memorandum to EPA's Source Control Manager and solicit comments. Unless substantive comments are received during the comment period I will prepare an NFA letter for your signature.

References

- DEQ, 2007. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Oregon Department of Environmental Quality. September 22, 2003, Revised 2007.
- DEQ, 2004. Letter (Re: Screening Level Risk Assessment for Soil and Groundwater, Marine Finance Property, Portland, Oregon) and attachment (Re: Draft Source Control Evaluation criteria) from M. Pugh, Oregon Department of Environmental Quality, to D. Burch, Advanced American Diving Service, Inc. August 24.
- GeoDesign, 2003. Phase II environmental Site Assessment, Marine Finance Corporation, 8444 NW St. Helens Road, Portland, Oregon. Prepared by GeoDesign, Inc. June 16.
- Jacobs, 2000. Expanded Preliminary Assessment Data Report, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for Oregon Department of Environmental Quality. October.
- Lower Willamette Group (LWG), 2007, Portland Harbor RI/FS, Comprehensive Round 2 Report, February 21, 2007.
- MacDonald, D., C. Ingersoll, and T. Berger, 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Archives of Environmental Contaminant Toxicology 39:20-31.

- MFA, 2004a. Screening-level Risk Evaluation for Soil and Groundwater, Marine Finance Corporation Property, Portland, Oregon. August 13. Prepared for Advanced American Construction Properties, LLC, by Maul Foster & Alongi, Inc.
- MFA, 2004b. Source Control and Evaluation Plan, Advanced American Construction Properties, LLC, Portland, Oregon. Prepared for Advanced American Construction Properties LLC, Portland, Oregon. Maul Foster & Alongi, Inc., Portland, Oregon. October 20.
- MFA, 2005. Electronic mail to M. Pugh, Oregon Department of Environmental Quality, from A. St. John, Maul Foster & Alongi, Inc. July 18, 2005.
- MFA, 2006. Site Development Report, Advanced American Construction Properties, LLC, Portland, Oregon. Prepared for Advanced American Construction Properties LLC, August 11, 2006.
- MFA, 2007. May 2007 Stormwater Sampling Event, Advanced American Construction Properties, LLC, Portland, Oregon. May 25, 2007.
- PBS, 1993. Phase One Environmental Property Assessment Report for Riverside Park, Portland, Oregon.
- USEPA, 1998. Portland Harbor Sediment Investigation Report. United States Environmental Protection Agency Region X, Office of Environmental Cleanup, Seattle, Washington. EPA 910/R-98-006.

Attachments:

- Figure 1: Site Location
Figure 2: Pre-Development Site Features and Sampling Locations
Figure 3: Site Development and Utilities
Figure 4: Surface and Subsurface Sediment Sampling Locations Between RM 5.0 and RM 6.0.
Figure 5: Total PCB Aroclors (ug/kg)
Figure 6: 2,4' and 4, 4'-DDT (ug/kg)
- Table 1: Benzo(a)pyrene Concentrations in Soil Management Areas (ug/kg)
Table 2: Copper and Lead Concentrations in Soil Management Areas (ug/kg)
Table 3: Soil Management Plan
Table 4: Total Metals in Stormwater (ug/L)
Table 5: Polycyclic Aromatic Hydrocarbons in Stormwater (ug/L)
Table 6: Total Petroleum Hydrocarbons in Stormwater (ug/L)

Appendix A: DEQ Source Control Decision Memorandum, September 30, 2004

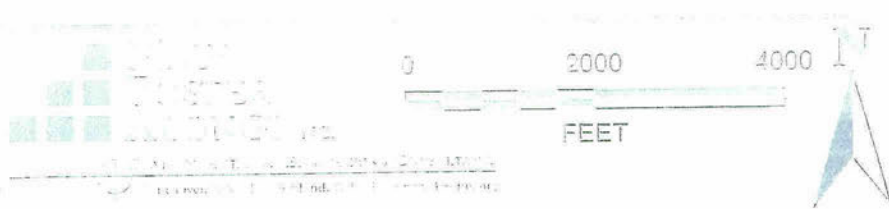
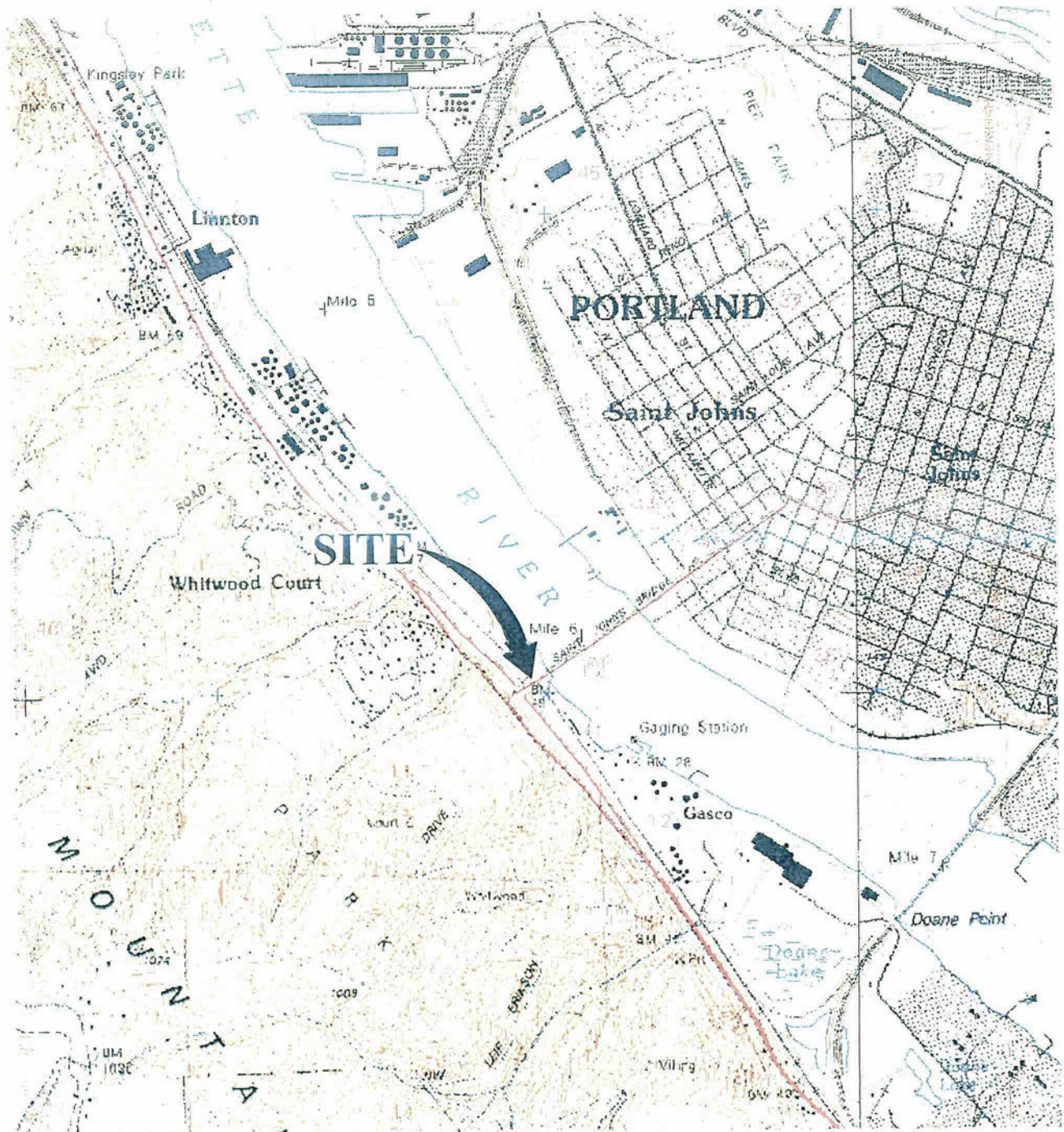


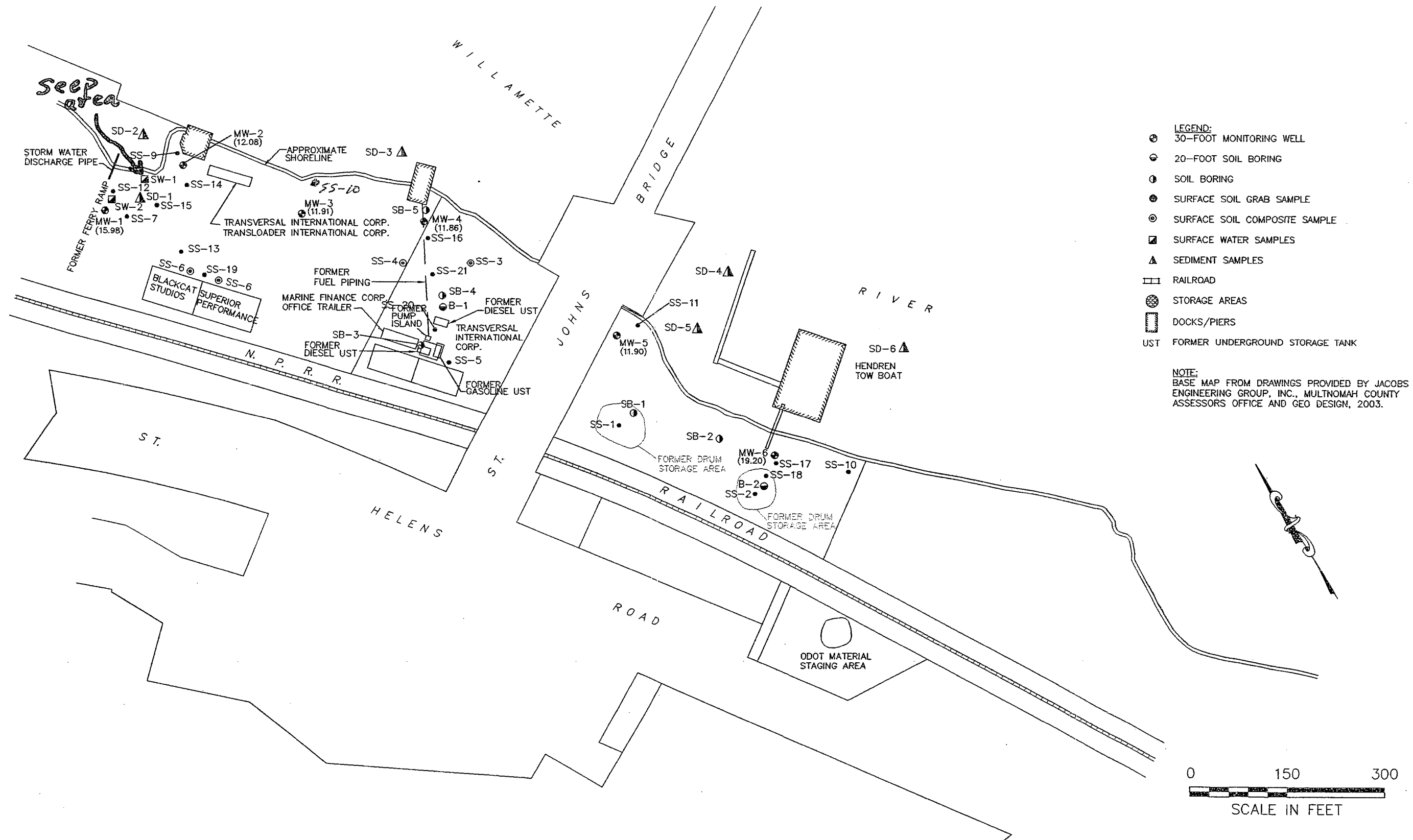
Figure 1
Site Location

Advanced American
Construction Properties, LLC
Portland, Oregon

Source: Base Map Prepared from DeLorme 3-D TopoQuads (1999)
Site Address: 8444 NW St. Helens Road, Portland, Oregon
Section: 11 Township: 1N Range: 1W Of Willamette Meridian



File: G:\0100.01 ADVA... J AMER CONSTRUCTION PROPERTIES, LLC\02 SITE DEVELOPMENT RPT\FIG1 SITE LOCATION.DWG... .t edited: AUG. 03, 2006 @ 09:57 a.m. by: caduser Xrefs: none black/white



Vancouver: (360) 694-2691
Portland: (971) 544-2139

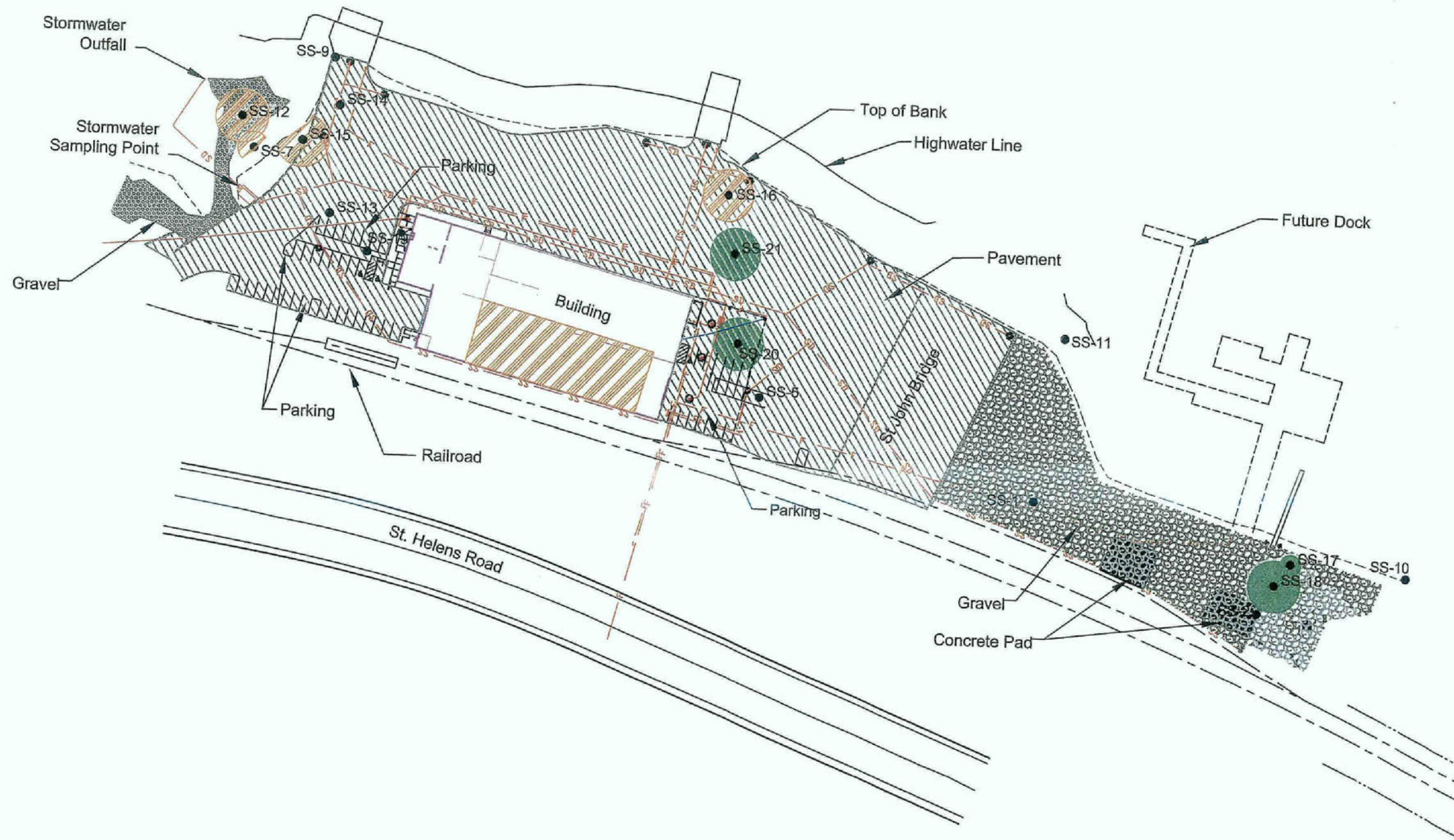


DATE 08/09/04
DWN. DLG
APPR. ASS
REVIS.
PROJECT NO.
0100.01.01

Figure 2
ADVANCED AMERICAN CONSTRUCTION
PROPERTIES
PORTLAND, OREGON
PRE-
development
SITE FEATURES AND
SAMPLE LOCATIONS

Figure 3 Site Development and Utilities

Advanced American
Construction Properties, LLC
Portland, Oregon



Legend:

Surface Soil Sample Location

Areas That Were Capped in Place. SS-17 and SS-18 were capped with up to 5 feet of imported fill and gravel. SS-20 and SS-21 were capped with up to 3 feet of imported fill and gravel and paved.

SD Stormwater Lines

SS Sanitary Lines

F Firewater Lines

Pavement (At Least 6" of Rock and 4" of Asphalt and in Some Areas Underlain by Imported Fill)

Gravel Underlain by Imported Fill

Soil with concentrations exceeding source control criteria were excavated and placed the under building foundation (~535 cubic yards)

Note:

Base map from drawings provided by Group Mackenzie on April 4, 2005.



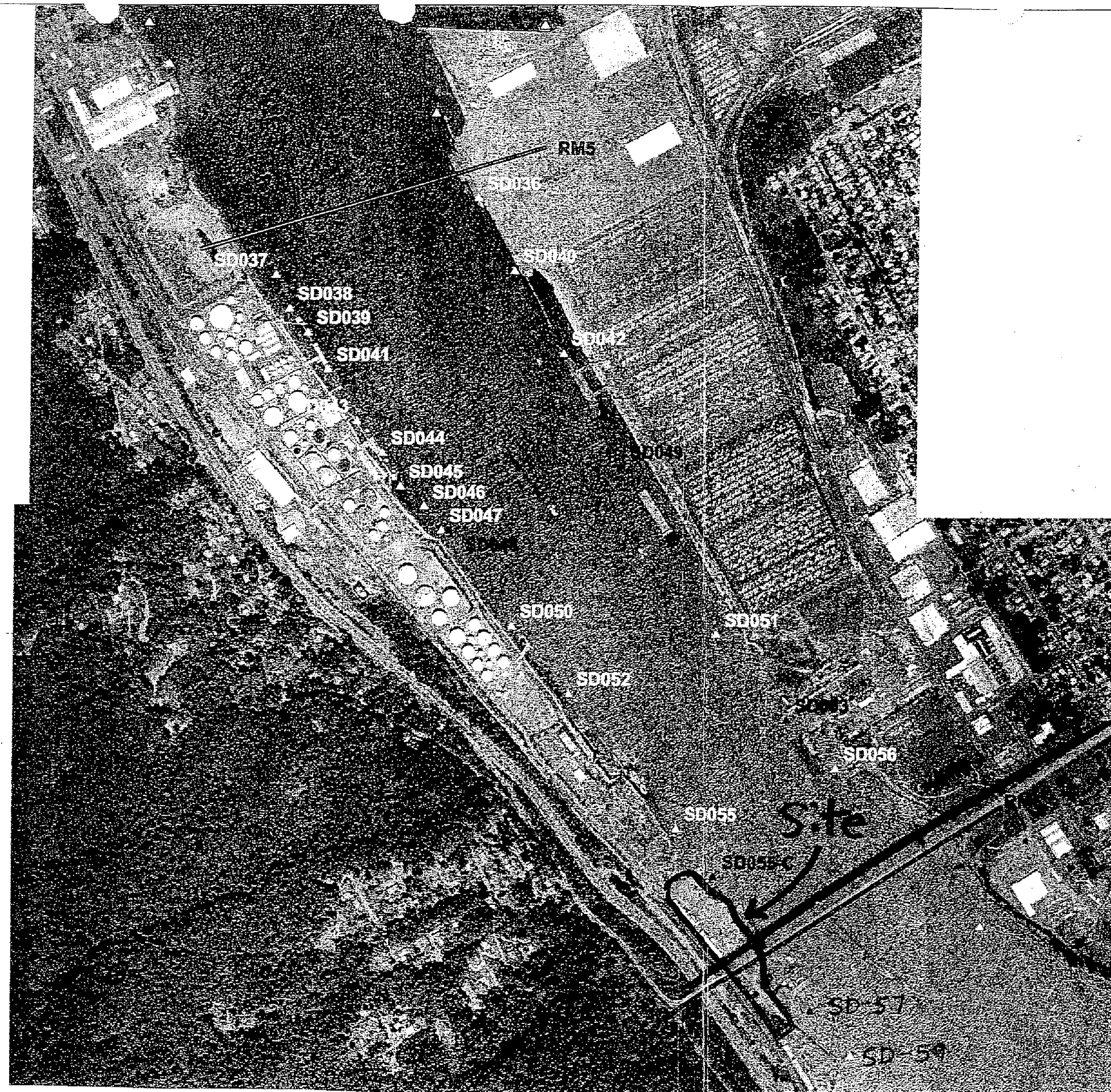
0 120 240
FEET

MAUL
FOSTER
ALONGI INC.

ENVIRONMENTAL & ENGINEERING CONSULTANTS
Vancouver, WA Portland, OR www.MFAinc.org

Portland Harbor Sediment Investigation Portland, Oregon

Surface and Subsurface Sediment Sampling Locations Between RM 5.0 and RM 6.0



EXPLANATION:

Stations

- ▲ Surface and subsurface sediments sampling location
- △ Surface sediment sampling location
- C indicates core sample could not be co-located with surface sediment sampling location due to subsurface obstruction and/or insufficient recovery.

Note: SD-054 was not collected due to insufficient recovery.



500 0 500 1000 Feet

WESTON

Figure

4

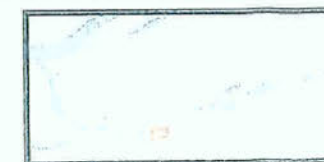
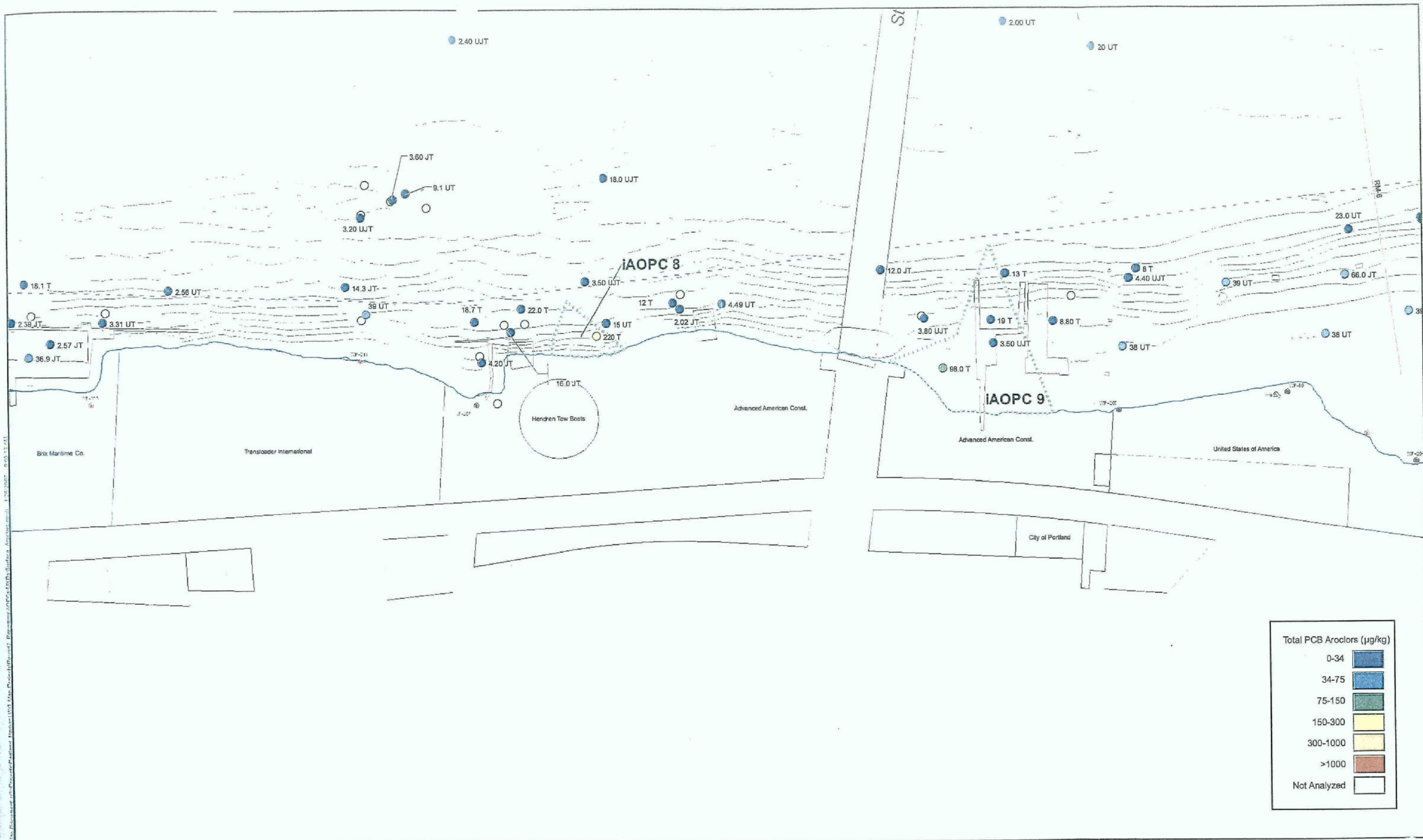


Figure 5.



Figure 6

Portland Harbor RI/FS
 Comprehensive Round 2 Report
 Concentrations in Surface Sediment
 Total of 2,4' and 4,4'-DDT ($\mu\text{g}/\text{kg}$)
 IAOPC 8,9



Table 1
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment—Bioaccumulation					100
SS7	SS7-0	0504037-01A	4/8/2005	0	110
SS7	SS7-1	0504037-02A	4/8/2005	1	6.67 U
SS7	SS7-2	0504037-03A	4/8/2005	2	6.67 U
SS7-5	SS7-5-0	0504037-04A	4/8/2005	0	146
SS7-5	SS7-5-1	0504037-07A	4/8/2005	1	6.67 U
SS7-5	SS7-5-2	0504037-10A	4/8/2005	2	23.3
SS7-10	SS7-10-0	0504037-05A	4/8/2005	0	108
SS7-10	SS7-10-1	0504037-08A	4/8/2005	1	54.7
SS7-20	SS7-20-0	0504037-06A	4/8/2005	0	201
SS7-20	SS7-20-1	0504037-09A	4/8/2005	1	73.3
SS7-30	SS7-30-1	0505158-24A	5/25/2005	1	74.7
SS7-40	SS7-40-1	0505158-23A	5/25/2005	1	40.0
SS7-50	SS7-50-1	0505158-22A	5/25/2005	1	38.7
SS7-50	SS7-50Dup	0505158-22A	5/25/2005	1	14.7
SS12	SS12-0	0504037-15A	4/8/2005	0	117
SS12	SS12-1	0504037-16A	4/8/2005	1	78.7 J
SS12	SS12-1-Dup	0504037-16A	4/8/2005	1	150 J
SS12	SS12-2	0504037-18A	4/8/2005	2	230
SS12-5	SS12-5-0	0504037-19A	4/8/2005	0	325
SS12-5	SS12-5-1	0504037-22A	4/8/2005	1	30.7
SS12-5	SS12-5-2	0504037-25A	4/8/2005	2	123
SS12-10	SS12-10-0	0504037-20A	4/8/2005	0	165
SS12-10	SS12-10-1	0504037-23A	4/8/2005	1	127
SS12-10	SS12-10-2	0504037-26A	4/8/2005	2	131
SS12-20	SS12-20-0	0504037-21A	4/8/2005	0	170
SS12-20	SS12-20-1	0504037-24A	4/8/2005	1	48.0
SS12-20	SS12-20-2	0504037-27A	4/8/2005	2	78.7
SS12-30	SS12-30-1	0505158-21A	5/25/2005	1	262
SS12-40	SS12-40-1	0505158-20A	5/25/2005	1	132
SS12-50	SS12-50-1	0505158-19A	5/25/2005	1	365
SS15	SS15-0	0504037-28A	4/8/2005	0	151
SS15	SS15-1	0504037-29A	4/8/2005	1	111
SS15	SS15-2	0504037-30A	4/8/2005	2	97.3
SS15-5	SS15-5-0	0504037-31A	4/8/2005	0	1040
SS15-5	SS15-5-1	0504037-33A	4/8/2005	1	434
SS15-5	SS15-5-2	0504037-36A	4/8/2005	2	42.0

Table 1
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment—Bioaccumulation					100
SS15-10	SS15-10-0	0504037-32A	4/8/2005	0	1120
SS15-10	SS15-10-1	0504037-34A	4/8/2005	1	88.0
SS15-10	SS15-10-2	0504037-35A	4/8/2005	2	90.7
SS15-20	SS15-20-0	0504089-01A	4/22/2005	0	1150
SS15-20	SS15-20-1	0504089-02A	4/22/2005	0	203
SS15-20	SS15-20-1.7	0504089-03A	4/22/2005	0	191
SS15-30	SS15-30-1	0505158-31A	5/25/2005	1	30.7
SS15-30	SS15-30-2	0505158-28A	5/25/2005	2	88.7 J
SS15-30	SS15-30Dup	0505158-28A	5/25/2005	2	4250 J
SS15-40	SS15-40-1	0505158-30A	5/25/2005	1	36.0
SS15-40	SS15-40-2	0505158-27A	5/25/2005	2	325
SS15-50	SS15-50-1	0505158-29A	5/25/2005	1	39.3
SS15-50	SS15-50-2	0505158-26A	5/25/2005	2	37.3
SS16	SS16-0	0504037-37A	4/8/2005	0	53.3
SS16	SS16-1	0504037-38A	4/8/2005	1	41.3
SS16	SS16-2	0504037-39A	4/8/2005	2	98.7
SS16-5	SS16-5-0	0504037-40A	4/8/2005	0	383
SS16-5	SS16-5-1	0504037-43A	4/8/2005	1	92.7
SS16-5	SS16-5-2	0504037-46A	4/8/2005	2	73.3 J
SS16-5	SS16-5-2-Dup	0504037-46A	4/8/2005	2	30.0 J
SS16-10	SS16-10-0	0504037-41A	4/8/2005	0	56.0
SS16-10	SS16-10-1	0504037-44A	4/8/2005	1	81.3
SS16-20	SS16-20-0	0504037-42A	4/8/2005	0	231
SS16-20	SS16-20-1	0504037-45A	4/8/2005	1	173
SS16-30	SS16-30-2	0505158-18A	5/24/2005	2	225
SS16-40	SS16-40-2	0505158-17A	5/24/2005	2	358
SS16-50	SS16-50-2	0505158-16A	5/24/2005	2	528
SS17	SS17-0	0504037-50A	4/7/2005	0	48.7
SS17	SS17-1	0504037-51A	4/7/2005	1	24.0 J
SS17	SS17-Dup	0504037-51A	4/7/2005	1	67.3 J
SS17	SS17-2	0504037-53A	4/7/2005	2	40.7
SS17-5	SS17-5-0	0504037-54A	4/7/2005	0	103
SS17-5	SS17-5-1	0504037-57A	4/7/2005	1	10.7
SS17-5	SS17-5-2	0504037-60A	4/7/2005	2	75.3
SS17-10	SS17-10-0	0504037-55A	4/7/2005	0	147
SS17-10	SS17-10-1	0504037-58A	4/7/2005	1	77.3
SS17-20	SS17-20-0	0504037-56A	4/7/2005	0	38.0
SS17-20	SS17-20-1	0504037-59A	4/7/2005	1	124
SS17-30	SS17-30-1	0505158-06A	5/24/2005	1	86.7
SS17-30	SS17-30-2	0505158-05A	5/24/2005	2	21.3

Table I
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment—Bioaccumulation					100
SS17-40	SS17-40-1	0505158-04A	5/24/2005	1	311
SS17-40	SS17-40-2	0505158-03A	5/24/2005	2	50.0
SS17-50	SS17-50-1	0505158-02A	5/24/2005	1	43.3
SS17-50	SS17-50-2	0505158-01A	5/24/2005	2	88.0
SS18	SS18-0	0504037-63A	4/7/2005	0	68.7
SS18	SS18-1	0504037-64A	4/7/2005	1	54.0
SS18	SS18-2	0504037-65A	4/7/2005	2	207
SS18-5	SS18-5-0	0504037-66A	4/7/2005	0	227
SS18-5	SS18-5-1	0504037-69A	4/7/2005	1	185
SS18-5	SS18-5-2	0504037-73A	4/7/2005	2	63.3
SS18-10	SS18-10-0	0504037-67A	4/7/2005	0	321
SS18-10	SS18-10-1	0504037-70A	4/7/2005	1	42.7
SS18-10	SS18-10-2	0504037-74A	4/7/2005	2	48.7
SS18-20	SS18-20-0	0504037-68A	4/7/2005	0	175
SS18-20	SS18-20-1	0504037-72A	4/7/2005	1	176
SS18-20	SS18-20-2	0504037-75A	4/7/2005	2	573
SS18-30	SS18-30-2	0505158-09A	5/24/2005	2	42.7
SS18-40	SS18-40-2	0505158-08A	5/24/2005	2	318
SS18-50	SS18-50-2	0505158-07A	5/24/2005	2	118
SS20	SS20-0	0504037-76A	4/7/2005	0	80.0
SS20	SS20-1	0504037-77A	4/7/2005	1	421
SS20	SS20-2	0504037-78A	4/7/2005	2	114
SS20-5	SS20-5-0	0504037-79A	4/7/2005	0	66.0
SS20-5	SS20-5-1	0504037-82A	4/7/2005	1	339
SS20-5	SS20-5-2	0504037-85A	4/7/2005	2	317
SS20-10	SS20-10-0	0504037-80A	4/7/2005	0	76.0
SS20-10	SS20-10-1	0504037-83A	4/7/2005	1	14600
SS20-10	SS20-10-2	0504037-86A	4/7/2005	2	467
SS20-20	SS20-20-0	0504037-81A	4/7/2005	0	41.3
SS20-20	SS20-20-1	0504037-84A	4/7/2005	1	455
SS20-20	SS20-20-2	0504037-87A	4/7/2005	2	485
SS20-30	SS20-30-2	0505158-12A	5/24/2005	2	81.3
SS20-40	SS20-40-2	0505158-11A	5/24/2005	2	135
SS20-50	SS20-50-2	0505158-10A	5/24/2005	2	317
SS21	SS21-0	0504038-01A	4/7/2005	0	123
SS21	SS21-1	0504038-02A	4/7/2005	1	532
SS21	SS21-2	0504038-03A	4/7/2005	2	703

Table 1
Benzo(a)pyrene Concentrations in Soil Management Areas (µg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Benzo(a)pyrene
USEPA Region 9 PRG (Industrial)					210
DEQ RBC _{ss} (Excavation Worker)					59,000
DEQ RBC _{ss} (Construction Worker)					2,100
DEQ RBC _{ss} (Occupational)					270
DEQ Level II SLV for Sediment—Bioaccumulation					100
SS21-5	SS21-5-0	0504038-04A	4/7/2005	0	178
SS21-5	SS21-5-0-Dup	0504038-04A	4/7/2005	0	183
SS21-5	SS21-5-1	0504038-08A	4/7/2005	1	1580
SS21-5	SS21-5-2	0504038-11A	4/7/2005	2	1330
SS21-10	SS21-10-0	0504038-06A	4/7/2005	0	143
SS21-10	SS21-10-1	0504038-09A	4/7/2005	1	455
SS21-10	SS21-10-2	0504038-12A	4/7/2005	2	749
SS21-20	SS21-20-1	0504038-10A	4/7/2005	1	327
SS21-20	SS21-20-2	0504038-13A	4/7/2005	2	481
SS21-30	SS21-30-2	0505158-15A	5/24/2005	2	447
SS21-40	SS21-40-2	0505158-14A	5/24/2005	2	145
SS21-50	SS21-50-2	0505158-13A	5/24/2005	2	950

Table 2
Copper and Lead Concentrations in Soil Management Areas (mg/kg)
Advanced American Construction Properties, LLC
Portland, Oregon

Site	Sample ID	Lab Sample ID	Date Collected	Depth (ft bgs)	Copper	Lead
USEPA Region 9 PRG (Industrial)					41000	800
DEQ RBC _{ss} (Occupational)					NA	750
DEQ RBC _{ss} (Construction)					NA	750
DEQ RBC _{ss} (Excavation)					NA	750
DEQ Level II SLV for Sediment—Bioaccumulation					149	128
SS21	SS21-0	0504038-01A	4/7/2005	0	--	107
SS21	SS21-1	0504038-02A	4/7/2005	1	--	5.88
SS21	SS21-2	0504038-03A	4/7/2005	2	--	7.06
SS21-5	SS21-5-0	0504038-04A	4/7/2005	0	--	111
SS21-5	SS21-5-0-Dup	0504038-04A	4/7/2005	0	--	85.3
SS21-5	SS21-5-1	0504038-08A	4/7/2005	1	--	3.73
SS21-5	SS21-5-2	0504038-11A	4/7/2005	2	--	9.48
SS21-10	SS21-10-0	0504038-06A	4/7/2005	0	--	59.5
SS21-10	SS21-10-1	0504038-09A	4/7/2005	1	--	4.52
SS21-10	SS21-10-2	0504038-12A	4/7/2005	2	--	9.20
SS21-20	SS21-20-1	0504038-10A	4/7/2005	1	--	30.2
SS21-20	SS21-20-2	0504038-13A	4/7/2005	2	--	6.52
SS9	SS9-0	0504037-13A	4/8/2005	0	109 J	--
SS9-5	SS9-5-0	0504037-14A	4/8/2005	0	102 J	--

Table 3
Recommended Soil Management Plan
Advanced American Construction Properties, LLC
Portland, Oregon

Sample Location	Horizontal Impacts	Vertical Impacts	Volume of Impacted Soil		Exceed Source Control Levels (depth [ft], distance [diameter [ft]])?	Exceed PRGs and/or RBCs (Occupational)(depth [ft], distance [diameter [ft]])?	Exceed RBCs (Construction and Excavation Workers)(depth [ft], distance [diameter [ft]])?	Exceed Hot Spot Concentrations for Benthic Biota?	Estimated Current Elevation (ft NGVD)	Estimated Future Elevation (ft NGVD)	Action
	(diameter in feet)	(feet bgs)	(CY)	(ton)							
SS7	30	1	26	39	Y (0, 20)	N	N	N	20	20	Soil will be removed to 1 feet bgs within a 30 feet diameter of the sample location for source control. Soil will not be excavated from the bank.
SS9	NA	NA	NA	NA	N	N	N	N	28	29	No source control measures are necessary. The area will be paved as part of redevelopment.
SS12	50	3	218	327	Y (2, 50)	Y (2,0; 0,5;1,30;1,50)	N	N	16.8	16.8	Soil will be removed to 3 feet bgs within a 50 ft diameter of the sample location for source control and to protect human receptors.
SS15	50	3	218	327	Y (2, 40)	Y (0,1; 5,2; 10,0; 20, 1,7; 30,2; 40,2)	Y (2,30)	Y (0,5; 0,10; 0,20; 2, 30)	29.4	29.4	Soil will be removed to 3 feet bgs within a 50 ft diameter of the sample location. Soil will not be excavated from the bank. Excavation, backfill, and capping as part of redevelopment will provide a 3 feet thick cap in this area, thereby eliminating exposure pathways for ecological and human receptors.
SS16	50	2	146	220	Y (0,5; 1,20; 2,30; 2,40; 2,50)	Y (0,5; 2,30; 2,40; 2,50)	N	N	29.3	29.95	This area will be paved as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors. Approximately one foot of soil will be excavated to accommodate the placement of gravel and asphalt to meet the final proposed elevation.
SS17	15	1	6.5	10	Y (0,5; 0,10; 1,20; 1,40)	Y (1,40)	N	N	28.45	33.35	Concentrations > SLV at 0 feet bgs between 5 ft and 20 ft diameters of the sample location. Concentration > SLV, PRG, and RBC at 1 ft bgs at 40 ft diameter. Detected concentrations do not exceed the RBCs for construction and excavation workers. Concentrations do not exceed hot spot levels for aquatic biota or human receptors. This area will be capped with up to 5 feet of gravel as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors.
SS18	50	3	218	327	Y (2,0; 1,5; 0,10; 2,20; 2,40; 2,50)	Y (0,5; 0,10; 2,20; 2,40)	N	N	29.0	35.0	This area will be capped with up to 5 feet of gravel, thereby eliminating exposure pathways for ecological and human receptors.
SS20	50	1	73	110	Y (2,0; 2,5; 2,10; 2,20; 2,40; 2,50)	Y (1,0; 2,5; 2,10; 2,20; 2,50)	Y (1,20)	Y (1,20)	30.5	33.5	This area will be capped with up to 3 feet of fill and paved as part of redevelopment, thereby eliminating exposure pathways for ecological and human receptors.
SS21	NA	NA	NA	NA	Y (2,0; 2,5; 2,10; 2,20; 2,30; 2,40; 2,50)	Y (2,0; 2,5; 2,10; 2,20; 2,30; 2,40; 2,50)	N	Y (1,5; 2,5)	29.9	32.75	Concentrations > SLV, PRG, and/or RBC to 2 feet bgs within a 50 ft diameter of the sample location. Detected concentrations do not exceed the RBCs for construction and excavation workers. Detected concentrations do not exceed hot spot levels for benthic biota, except at 1 foot and 2 ft bgs at 5 ft diameter from SS-21. Detected concentrations do not exceed hot spot levels for human receptors. This area will be capped with up to 3 feet of fill and paved as part of redevelopment, thereby eliminating exposure pathways for human and ecological receptors.
NOTES: CY = cubic yard bgs = below ground surface Cu = copper ft = feet NA = not applicable PRG = U.S. Environmental Protection Agency (USEPA) preliminary remediation goal (USEPA, 2004). RBC = Oregon Department of Environmental Quality (DEQ) risk-based concentration for direct contact with soil by occupational, construction, or excavation workers (DEQ, 2003). SLV = DEQ ecological screening level value for possible toxicity (Cu) or bioaccumulation (benzo[a]pyrene) related to chemicals in sediment.											

Table 4
Total Metals in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Sample	Lab Sample	Date Collected	Depth (feet bgs)	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological					3.1	0.094	NV	2.7	0.54	16	33
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health					0.014	5	100	1,300	15	460	2,600
AF1	AFI-052606	0605148-01	5/26/2006	12	0.33 J	0.019 UJ	0.738 UJ	1.46	0.181	0.484 UJ	18.2
	AFI-110706	0611043-01A	11/7/2006	12	0.028 UJ	0.019 UJ	0.738 UJ	1.28	0.256	0.484 UJ	18.7
	AFI-050207	0705023-01A	5/2/2007	12	0.18 J	0.019 U	0.74 U	5.74	0.035 U	0.50 J	51.1

Table 5
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				520	NV	0.73	0.027	0.014	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.2	0.2	0.0018	0.0018	0.0018
AF1	0605148-01	5/26/2006	12	0.033 J	0.00980 UJ	0.033 J	0.011 J	0.00654 UJ	0.00545 UJ
	0611043-01A	11/7/2006	12	0.00569 UJ	0.00854 UJ	0.00569 UJ	0.0095 J	0.00569 UJ	0.0095 J
	0705023-01A	5/2/2007	12	0.0057 U	0.00855 U	0.0095 J	0.028 J	0.0095 J	0.0095 J

Table 5
Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Benzo(ghi)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				NV	NV	NV	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.0018	0.0018	0.0018	0.2
AF1	0605148-01	5/26/2006	12	0.011 J	0.00871 UJ	0.011 J	0.00763 UJ	0.044 J
	0611043-01A	11/7/2006	12	0.0095 J	0.00759 UJ	0.0095 J	0.00664 UJ	0.0095 J
	0705023-01A	5/2/2007	12	0.0095 J	0.0095 J	0.0095 J	0.00665 U	0.38 J

Table 5
 Polycyclic Aromatic Hydrocarbons in Stormwater (µg/L)
 Advanced American Construction Properties, LLC
 Portland, Oregon

Location	Lab Sample ID	Date Collected	Depth (feet bgs)	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				3.9	NV	12	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				0.2	0.0018	0.2	0.2	0.2
AF1	0605148-01	5/26/2006	12	0.0654	0.00436 UJ	0.0654	0.153	0.033 J
	0611043-01A	11/7/2006	12	0.00569 UJ	0.0038 UJ	0.0569	0.0104 UJ	0.019 J
	0705023-01A	5/2/2007	12	0.0095 J	0.0095 J	0.0760 UJ	0.019 J	0.038 J

Table 6
Total Petroleum Hydrocarbons in Stormwater (mg/L)
Advanced American Construction Properties, LLC
Portland, Oregon

Location	Lab Sample	Date Collected	Depth (feet bgs)	Gasoline	Diesel	Lube-Oil-Range Hydrocarbons
USEPA / DEQ SLVs—Portland Harbor JSCS—Ecological				NV	NV	NV
USEPA / DEQ SLVs—Portland Harbor JSCS—Human Health				NV	NV	NV
AF1	0605148-01	5/26/2006	12	0.10 U	0.543	0.701
	0611043-01A	11/7/2006	12	0.238 U	0.10 U	0.477 U
	0705023-01A	5/2/2007	12	0.449	0.10 U	0.5 U

State of Oregon
Department of Environmental Quality

Memorandum

To: James M. Anderson, Manager
Portland Harbor Section

Date: September 30, 2004

From: Mark Pugh, NWR Cleanup and Emergency Response

cc: Rod Struck, NWR CU/PH

Subject: Source Control Decision
Marine Finance Site
8444 NW St. Helens Road
Portland, Oregon
ECSI #2352

1.0 INTRODUCTION

This memorandum presents the basis for the Oregon Department of Environmental Quality's (DEQ) proposed source control decision and approval of a source control plan for the Marine Finance site, located at 8444 NW St. Helens Road in Portland, Oregon (Figure 1).

DEQ is negotiating a Prospective Purchaser Agreement (PPA) with Advanced American Construction Properties LLC (AACP). AACP has completed a source evaluation and has developed a source control plan to be implemented during site development in order to address potentially complete contaminant pathways to the Willamette River. Once approved, the source control plan will serve as the scope of work for the PPA. The purpose of this memorandum is to summarize site characteristics, historical investigations, findings of the source control evaluation, and proposed source control measures to be implemented under the PPA.

2.0 SITE BACKGROUND

2.1 Site Description

This lies within a 6-mile stretch of the Lower Willamette River in which the U.S. Environmental Protection Agency (EPA) conducted a sediment study in 1997, and identified as a Superfund Site in 2000. This area, referred to as the *Portland Harbor*, is between the upstream ends of Sauvie Island (River Mile 3.5) and Swan Island (RM 9.5). The Marine Finance site lies on the west bank of the Willamette River at RM 6.

The site covers 7.46 acres immediately beneath the St. Johns Bridge (Figure 2). Approximately two-thirds of the property is located north of the bridge. The site is currently used for temporary equipment storage, offices, studio space for a metal sculptor, and tugboat



and moorage operations. Hendren Tow Boat Company operates on Marine Finance property south of the St. John's Bridge. Since Hendren Tow Boat started operations at the site in 1993, it has been used as a tug boat dock. Structures at the site include two metal Quonset Huts, a floating home builders dock, sheds, gangways and associated docks.

Historical operations began in the 1920s and include metal salvaging, marine construction, and tow boat/barge moorage.

A groundwater seep is located in the northwest corner of the site (at location SW-1 in Figure 2). The seep emerges from the ground and pools in a small area with standing water approximately 2 to 3 feet across. A storm water discharge pipe is located about 50 feet from the groundwater seep at or near the northern property boundary (location SW-2 in Figure 2). The pipe conveys storm water from property located south of the site. There are no storm water catch basins at the site, but it is possible that the storm water pipe captures infiltrated groundwater in the northern portion of the site. Water samples were collected and analyzed from both the seep and storm water outfall during the Expanded Preliminary Assessment as described below, and eventually were ruled out as pathways of concern.

2.2. Site Hydrogeology

The Marine Finance facility lies between U.S. Highway 30 (St. Helens Road) and the Willamette River, at the base of the Portland Hills. The facility was constructed on about 18 to 23 feet of predominantly sand fill. The inferred contact between fill and native material is a layer of wood fragments thought to represent the former land surface. Fill was emplaced at the site beginning in the 1940s and is thought to originate from private dredging of the Willamette River.

Groundwater at the site was encountered at about 16 feet bgs, and likely flows east to northeast towards the Willamette River. In general the native deposits are alluvial and consist of silt, sand and gravel mixtures, and result in unconfined and localized aquifers due to heterogeneity of the deposits. Occurring at various depths in the site vicinity, Columbia River Basalt (CRB) underlies these alluvial deposits. Deep wells installed in fractured CRB can be very productive and important supply wells.

Based on a groundwater well survey and Beneficial Water Use Determinations completed for nearby sites, it does not appear that groundwater in the immediate vicinity of the site is used for drinking water. Only two wells within a mile of the site were identified as water supply wells, and both of these wells are located in a hydrogeologic upgradient position with respect to the site. The wells are screened in CRB at depths of 425 feet and 530 feet, respectively. Shallow groundwater discharge to the Willamette River is the only beneficial water use identified at the site.

2.3 Site Investigative History

2.3.1 Underground Storage Tank (UST) Removal

Three underground storage tanks (USTs) were removed from the site in 1988. Contaminated soil was excavated from the tank pits to depths of 15 to 26 feet. Additional test pits were dug along the former route of the product lines, and additional contaminated soil was removed. The project received a “No Further Action” letter from the DEQ UST Program in February 1989.

2.3.2 Portland Harbor Sediment Sampling

In September and October 1997, EPA's contractor, Roy F. Weston, Inc., collected 187 near-shore sediment samples within the Portland Harbor Superfund Site area. All samples were analyzed for total metals, semi-volatile organic compounds (SVOCs), total organic carbon (TOC), and sediment grain size. Selected samples were also variously analyzed for organotins (TBTs), pesticides, polychlorinated biphenyls (PCBs), chlorinated herbicides, and polychlorinated dioxins and dibenzofurans.

Locations of sediment samples collected by EPA in the vicinity of the site are shown on Figure 3. The following contaminants were detected adjacent to the site (sample SD055-C) at concentrations exceeding the maximum baseline level for Portland Harbor: copper, lead, mercury, nickel, zinc, 2-methylnaphthalene, carbazole, dibenzofuran, low and high molecular weight polycyclic aromatic hydrocarbons (LPAHs and HPAHs, respectively), and total organic carbon.

The upstream shallow sediment sample (SD057) showed elevated levels of carbazole and LPAHs, and the subsurface sediment sample from the same location (SD057-C) showed elevated levels of mercury, benzoic acid, LPAHs and HPAHs. Contaminant concentrations observed in the upstream sample were generally lower than in the sample adjacent to the Marine Finance site. Based on this observation DEQ identified the site as a high priority for an upland investigation.

2.3.3 Expanded Preliminary Assessment (Jacobs, 2000)

DEQ declared the site an Orphan project in July 2000 after determining that Marine Finance Corporation was unwilling to perform the required investigation of the site. DEQ retained Jacobs Engineering to conduct an Expanded Preliminary Assessment (XPA). Jacobs collected soil, groundwater and sediment samples at the site in August 2000, and submitted the XPA report to DEQ in November 2000. The XPA included collection of six groundwater samples, five Willamette River sediment samples, and thirteen soil samples (Figure 2). In general, samples were analyzed for metals, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs; except sediments), SVOCs, total organotins (includes TBT), and PCBs.

In general, the results of the XPA indicated there was not significant widespread contamination or significant ongoing contaminant sources in the site upland. However,

the XPA identified several piles of abandoned containers, drums and batteries. DEQ completed removal of these items in May 2001.

Results for the sediment samples collected during the XPA were similar to samples collected previously by EPA, and showed elevated contaminant levels, especially for TPH and PAHs. However, DEQ determined that further work was needed to complete the site characterization, but elected not to expend costs for the additional investigation. To facilitate further site investigation DEQ identified the following general scope of work for completion of the site characterization:

- Collection of additional surface soil samples at approximately 10 locations to better define the lateral extent of surface soil contamination.
- Subsurface soil sampling from at least two discrete depth intervals at locations with the highest contaminant levels in surface soil and from the former UST location.
- Installation and quarterly monitoring of 6 monitoring wells across the eastern side of the property to assess shallow groundwater contaminants potentially discharging to the Willamette River.

2.3.4 Additional Investigation (GeoDesign, 2004)

GeoDesign, on behalf of Marine Finance Corporation, completed soil collection, monitoring well installation and an initial round of groundwater sampling as described above in early 2003 (GeoDesign, 2003). Additional groundwater monitoring events were conducted in July 2003 and April 2004. Those results were summarized in an initial screening level risk evaluation prepared by Maul, Foster and Alongi (MFA) on behalf of AACCP (MFA, 2004). The results of the additional investigation confirmed the limited magnitude and extent of contamination observed during the XPA.

DEQ reviewed the risk evaluation, and concluded that the XPA and additional investigation conducted by GeoDesign had adequately defined contaminant sources and the nature and extent of contamination in the upland portion of the site, and that the site was adequately characterized. DEQ further concluded that the existing information was sufficient to conduct both a human health risk screening and a source control evaluation in accordance with the draft joint EPA and DEQ Source Control Strategy. MFA conducted a source control evaluation under DEQ oversight. The results of the source control evaluation are presented in Section 3.

3.0 SOURCE CONTROL EVALUATION

In accordance with the draft joint EPA/DEQ Source Control Strategy, the potential pathways summarized below were evaluated by comparing media concentrations to appropriate screening criteria. Surface water and shallow groundwater concentrations were compared to Ambient Water Quality Criteria (AWQC; fresh water-chronic) for

protection of aquatic life. In the absence of AWQC, DEQ Screening Level Values (SLVs) for fresh surface water were used for screening.

Shallow soil (< 1 foot) concentrations were compared to probable effects concentrations for suspected sediment (PECs; MacDonald and others, 2000), and DEQ SLVs for the suspected Portland Harbor bioaccumulative chemicals. Benzo(a)pyrene is the only one of these suspected bioaccumulative chemicals that exceeded screening levels.

In general, only exceedences of screening criteria are discussed below. The potential contaminant pathways and source control screening results are as follows:

Migration of contaminated soil particles to the Willamette River through overland runoff (i.e., storm water erosion; See Tables 1, 2, and 3).

- The concentration of copper in surface soil from sample location SS-9 (270 milligrams per kilogram [mg/kg] and the concentration of lead in soil from sample location SS-21 (136 mg/kg) were above their respective sediment PECs of 149 mg/kg and 128 mg/kg, respectively.
- Concentrations of benzo(a)pyrene in surface soil from sample locations SS-7, SS-12, SS-15, SS-16, SS-18, SS-20 and SS-21 were above the DEQ sediment bioaccumulation SLV.
- Heavy-oil range hydrocarbon concentrations were detected above the State of Oregon generic remedy cleanup level of 500 mg/kg in two surface soil samples (SS-12 – 1,170 mg/kg; SS-6 – 9,800 mg/kg), and one subsurface soil sample (SB-4 – 1,100 mg/kg). Diesel-range hydrocarbon concentrations were detected above 500 mg/kg in one surface soil sample (SS-6 – 1,400 mg/kg). There are no established source control screening criteria for petroleum hydrocarbons.

Discharge of impacted shallow groundwater to surface water of the Willamette River (See Tables 4 and 5).

- Chromium copper, lead, mercury, nickel, silver and zinc were sporadically detected in groundwater samples. With the exception of silver, only one detected concentration for each of these metals exceeded screening criteria. Silver exceeded its screening criteria in two samples. Based on the general low frequency of detection, and very limited detections above screening level criteria, discharge of shallow groundwater does not appear to present a significant threat to the Willamette River for any of these metals. Arsenic was detected at a higher frequency (6 of 18 samples), but the reported concentrations are below the applicable screening criterion.

Direct discharge from a storm drain pipe in the northwest corner of the site, and migration of surface water from the groundwater seep area to the Willamette River. (See Table 6).

- With the exception of barium, the concentrations of metals in the storm water pipe discharge and the seep are below the screening criteria. Barium was detected at concentrations of 19.4 micrograms per liter (ug/L) and 5.2 ug/L in the pipe discharge and seep samples, respectively. The SLV for barium is 4 ug/L; there is no AWQC for barium (fish consumption). Barium occurs naturally in soil and water of the region, and at the detected concentrations are not likely to cause adverse effects on aquatic organisms. No VOCs or SVOCs were reported above method reporting limits in surface water samples (Jacobs, 2000). Groundwater quality in wells MW-1 and MW-2 does not appear to be impacted by the infiltration of discharges from the storm water pipe.

3.1 Source Control Conclusions

Concentrations of benzo(a)pyrene in surface soil samples collected at various locations across the site are greater than the DEQ SLV for bioaccumulation in sediment. Also, copper and lead were each detected above sediment PECs in surface soil at one location. These risk screening results suggest that soil in these areas will require management as part of the SCP.

Given the general low frequency of detection and the relatively low concentrations, it is unlikely that site-related chemicals in groundwater could migrate to surface water or sediment of the Willamette River at concentrations that could pose unacceptable risks to aquatic biota. No risk management actions appear to be required for groundwater.

Discharges from the storm water pipe and the ponded seep water do not appear to have impacted surface water or groundwater. The pipe appears to drain a relatively small, unimpacted area of the site. No risk management actions appear to be required for site surface water.

As discussed above, heavy oil-range and diesel-range hydrocarbon concentrations were detected infrequently in site soil at low to moderate concentrations. Because there are no established source control screening criteria for these compounds, DEQ uses constituent concentrations (e.g., PAHs, selected VOCs) to evaluate potential risk. Given that VOCs were not detected above screening levels, the only PAH detected above screening levels (benzo(a)pyrene) is being addressed in the source control plan as discussed below, and that petroleum hydrocarbon-impacted soil is limited in extent and is of low to moderate concentrations, DEQ has concluded that hydrocarbons present in soil do not present a significant risk to the Willamette River through storm water runoff or erosion.

Based on these findings, the soil to sediment pathway was identified as the only potentially significant pathway of concern to the Willamette River. The source control actions proposed below are designed to mitigate this pathway, and to address future storm water management during construction and site operation.

4.0 SOURCE CONTROL PLAN

4.1 Soil Removal Action

The source control measures proposed by AACP are focused on addressing potential overland runoff of soil to the Willamette River. The measures address soil with concentrations exceeding the source control criteria that are within 100 feet of the Willamette River, because it is most susceptible to transport to the river. Figure 2 shows samples where source control criteria were exceeded.

It is proposed that soil within 20 feet of each sample location will be excavated to 1 foot bgs to prevent possible erosion and transport of impacted soil to the river. The total volume of material to be excavated is approximately 105 cubic yards of material.

Confirmation samples will be collected following excavation. Confirmation samples will consist of three samples collected from the sidewalls and the floor of the excavation and composited into one sample for analyses of COIs. Excavation will continue until concentrations are below the source control screening criteria. Excavations will be backfilled with either imported clean fill, or fill from other areas of the site. Fill material will be sampled to ensure that any PAH or metal concentrations are below their respective sediment PECs.

4.2 Solid Waste Management Plan

To ensure that soil from other areas of the site are not emplaced within the 100-foot buffer zone with the Willamette River, any soil that is disturbed during site development will be field-screened for petroleum-like odor, staining, sheen, or elevated photoionization detector readings. Representative samples of any apparently impacted soil will be collected and analyzed to assess appropriate reuse or disposal options. Soil management protocols are included in the source control plan and are consistent with local, county, and state solid waste management rules.

AACP will implement erosion control measures during site grading and excavation in accordance with a DEQ 1200C permit, to mitigate potential site runoff to the Willamette River.

5.0 SUMMARY AND CONCLUSIONS

AACP has conducted a source control evaluation to identify potentially complete exposure pathways to the Willamette River. Potential surface soil erosion from the site to the Willamette River was identified as the only pathway of concern.

The proposed soil removal will address soil with concentrations above screening criteria for the protection of sediments. Soil in other areas of the site that will be excavated or otherwise disturbed during development will be field screened, characterized, and managed in accordance with solid waste rules. Any on-site soil reuse must be approved by the DEQ.

A human health risk screening will be completed prior to re-development of the property to ensure that the intended industrial use is acceptable. During redevelopment, protocols documented in the solid waste management plan will be followed to ensure that site workers are not exposed to potentially significant levels of contamination, and that any soil excavated or disturbed is managed such that it does not present a risk to human health or the environment.

6.0 RECOMMENDATION

DEQ has reviewed the source control evaluation and plan and concurs with the findings of the evaluation, and has determined that the proposed source control measures will effectively mitigate the potentially significant contaminant pathways to the Willamette River.

I request you approve my recommendation to approve this source control decision and source control action. DEQ intends to issue a press release once the PPA is finalized, to announce the PPA and the proposed source control measure. Please forward this memorandum to members of the Portland Harbor Technical Coordination Team for their review and comment. Given the desired date for finalizing the PPA (November 1, 2004), I request that we receive these comments no later than November 1, 2004.

References

DEQ. 2004. Letter (re screening level risk assessment for soil and groundwater, Marine Finance Property, Portland, Oregon) and attachment (re draft source control evaluation criteria) from M. Pugh, Oregon Department of Environmental Quality, to D. Burch, Advanced American Diving Service, Inc. August 24.

GeoDesign. 2003. Phase II environmental site assessment, Marine Finance Corporation, 8444 NW St. Helens Road, Portland, Oregon. Prepared by GeoDesign, Inc. June 16.

Jacobs. 2000. Expanded preliminary assessment data report, Marine Finance Site, Portland, Oregon. Prepared by Jacobs Engineering Group, Inc., for Oregon Department of Environmental Quality. October.

MacDonald, D., C. Ingersoll, and T. Berger. 2000. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Archives of Environmental Contaminant Toxicology* 39:20-31.

MFA. 2004. Screening-level risk evaluation for soil and groundwater, Marine Finance Corporation Property, Portland, Oregon. August 13. Prepared for Advanced American Construction Properties, LLC, by Maul Foster & Alongi, Inc.

Attachments:

Figure 1: Location Map

Figure 2: Surface Soil Sample Locations with Screening Criteria Exceedences

Table I
Metals in Surface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Aluminum mg/kg	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Calcium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Iron mg/kg
SS-12	8/20/2003	NA	NA	3.77	NA	NA	NA	NA	NA	NA	NA	NA
SS-13	8/20/2003	NA	NA	1.10	NA	NA	NA	NA	NA	NA	NA	NA
SS-14	8/20/2003	NA	NA	4.07	NA	NA	NA	NA	NA	NA	NA	NA
SS-15	8/20/2003	NA	NA	13.4	NA	NA	NA	NA	NA	NA	NA	NA
SS-16	8/20/2003	NA	NA	7.06	NA	NA	NA	NA	NA	NA	NA	NA
SS-17	8/20/2003	NA	NA	2.57	NA	NA	NA	NA	NA	NA	NA	NA
SS-18	8/20/2003	NA	NA	2.77	NA	NA	NA	NA	NA	NA	NA	NA
SS-19	10/15/2003	NA	NA	4.08	NA	NA	NA	NA	NA	NA	NA	NA
SS-20	10/15/2003	NA	NA	3.63	NA	NA	NA	NA	NA	NA	NA	NA
SS-21	10/15/2003	NA	NA	12.3	NA	NA	NA	NA	NA	NA	NA	NA
SS-1	8/11/2000	8,690	6.1 B	3.3	99.7	0.3 B	0.1 U	5,100	15.4	10	26.4	24,300
SS-2	8/11/2000	9,090	8.1 B	7.3	115	0.3 B	0.1 B	5,160	29.7	14.8	45.5	39,100
SS-3	8/11/2000	11,000	5.7 B	3.8	131	0.4 B	0.1 U	4,890	13.4	11.6	28.8	35,800
SS-4	8/11/2000	13,400	7.6 B	5.0	129	0.3 B	0.1 U	5,710	43.5	11	42.1	33,800
SS-5	8/10/2000	8,640	4.23 U	4.1	72.8	0.2 B	0.1 U	6,030	81.3	8.1	52.6	25,800
SS-6	8/10/2000	11,000	7.6 B	8.9	131	0.3 B	0.1 U	4,580	17	9.7	46.0	30,300
SS-7	8/10/2000	NA	0.31	12.1	NA	0.23	0.16	NA	33.3	NA	24.2	NA
SS-8	8/10/2000	5,280	9.6 B	0.9 B	43.9	0.1 B	0.1 U	4,150	8.2	16.3	12.8	38,700
SS-9	8/10/2000	9,890	7.4 B	13.3	137	0.2 B	0.1 U	15,200	28.0	11.1	270	36,200
SS-10	8/10/2000	10,500	4.2 U	2.9	112	0.3 B	0.1 U	4,460	11.6	15.5	19.2	22,600
SS-11	8/10/2000	10,900	7.6 B	7.6	113	0.3 B	0.5 B	5,120	22.7	11.7	48.2	29,200
Screening Criteria												
Background		52,300	NV	6	NV	2	1	NV	27	NV	34	36,100
Consensus-Based PEC		NV	NV	33	NV	NV	5	NV	111	NV	149	NV

notes:

Background: Clark County 90th Percentile Value from Washington Department of Ecology, October 1994.

mg/kg: milligrams per kilogram

PECs: Probably Effects Concentration from McDonald et al (2000)

ND: not detected above method reporting limits

NV: No established value

Shaded concentrations exceed PECs

Table I
Metals in Surface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Lead mg/kg	Magnesium mg/kg	Manganese mg/kg	Mercury mg/kg	Nickel mg/kg	Potassium mg/kg	Selenium mg/kg	Silver mg/kg	Sodium mg/kg	Thallium mg/kg	Vanadium mg/kg
SS-12	8/20/2003	42.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-13	8/20/2003	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-14	8/20/2003	21.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-15	8/20/2003	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-16	8/20/2003	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-17	8/20/2003	21.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-18	8/20/2003	34.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-19	10/15/2003	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-20	10/15/2003	26.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-21	10/15/2003	136	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-1	8/11/2000	31.3	3,730	459	0.03	12.3	677	0.5 U	0.8 U	268	0.2 U	70.6
SS-2	8/11/2000	90.7	2,580	621	0.03	17.8	576	1.0 B	0.8 U	263	0.2 U	96.7
SS-3	8/11/2000	47.9	3,220	547	0.03	14.6	880	0.5 U	0.8 U	320	0.2 U	92.0
SS-4	8/11/2000	51.7	6,650	507	0.04	27.5	805	0.5 U	0.8 U	583	0.2 U	79.6
SS-5	8/10/2000	35.1	2,880	708	0.03	31.6	621	0.5 U	0.8 U	377	0.2 U	63.6
SS-6	8/10/2000	37.8	3,280	425	0.02	15	781	0.5 U	0.8 U	376	0.2 U	82.7
SS-7	8/10/2000	21.2	NA	NA	0.02 B	18.5	NA	1.0 U	0.0	NA	0.07	NA
SS-8	8/10/2000	11.3 B	1,470	470	0.01 U	7.7	545	0.5 U	0.8 U	282	0.2 U	134
SS-9	8/10/2000	56	3,810	543	0.04	16.9	856	0.5 U	0.8 U	456	0.2 U	68
SS-10	8/10/2000	15.5	3,560	481	0.03	13.8	563	0.9 B	0.8 U	316	0.2 U	80.4
SS-11	8/10/2000	70.5	3,080	430	0.09	31.8	716	0.5 U	0.8 U	506	0.2 U	91.9
Screening Criteria												
Background		17	NV	1,500	0	21	NV	NV	NV	NV	NV	NV
Consensus-Based PEC		128	NV	NV	NV	49	NV	NV	NV	NV	NV	NV

notes:

Background: Clark County 90th Per
mg/kg: milligrams per kilogram
PECs: Probably Effects Concentrati
ND: not detected above method rep
NV: No established value
Shaded concentrations exceed PEC

Table 1
Metals in Surface Soil
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Zinc mg/kg
SS-12	8/20/2003	NA
SS-13	8/20/2003	NA
SS-14	8/20/2003	NA
SS-15	8/20/2003	NA
SS-16	8/20/2003	NA
SS-17	8/20/2003	NA
SS-18	8/20/2003	NA
SS-19	10/15/2003	NA
SS-20	10/15/2003	NA
SS-21	10/15/2003	NA
SS-1	8/11/2000	76.6
SS-2	8/11/2000	194
SS-3	8/11/2000	98.5
SS-4	8/11/2000	184
SS-5	8/10/2000	82.3
SS-6	8/10/2000	172
SS-7	8/10/2000	81.5
SS-8	8/10/2000	60.6
SS-9	8/10/2000	458
SS-10	8/10/2000	66
SS-11	8/10/2000	219
Screening Criteria		
Background		96
Consensus-Based PEC		459

notes:

Background: Clark County 90th Per
mg/kg: milligrams per kilogram
PECs: Probably Effects Concentrations
ND: not detected above method rep
NV: No established value
Shaded concentrations exceed PEC

Table 2
TPH, PAHs, and VOCs in Surface Soil (0–0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Total Petroleum Hydrocarbons by NWTPH-Dx		PAHs by EPA Method 8270-SIM				
		Diesel-Range mg/kg	Heavy Oil-Range mg/kg	Acenaphthene ug/kg	2-Methyl-naphthalene ug/kg	Acenaphthylene ug/kg	Anthracene ug/kg	Benzo(a)-anthracene ug/kg
SS-12	08/20/03	500 U	1,170	268 U	ND	268 U	268 U	268 U
SS-13	08/20/03	25 U	50 U	13.4 U	ND	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	51	66.4	26.8 U	ND	26.8 U	26.8 U	46.3
SS-15	08/20/03	25 U	50 U	64.3	ND	26.8 U	26.8 U	147
SS-16	08/20/03	34	164	70.9	ND	36	35.6	223
SS-17	08/20/03	25 U	50 U	57.4	ND	13.4 U	20.8	171
SS-18	08/20/03	25 U	50 U	42	ND	26.8 U	26.8 U	97.4
SS-19	10/15/03	25 U	50 U	35.1	ND	13.4 U	13.4 U	19.9
SS-20	10/15/03	25 U	50 U	23.7	ND	13.4 U	17.2	102
SS-21	10/15/03	32.3	142	48.3	ND	44.5	76.2	516
SS-1	8/11/2000	35	98 U	ND	ND	ND	ND	ND
SS-2	8/11/2000	84	250	ND	ND	ND	ND	0.65
SS-3	8/10/2000	230	260	ND	ND	ND	ND	ND
SS-4	8/10/2000	220	110	NA	NA	NA	NA	NA
SS-5	8/10/2000	28	110	ND	ND	ND	ND	ND
SS-6	08/10/00	1,400	9,800	ND	ND	ND	ND	ND
SS-7	08/09/00	62	380	110	3 J	3 J	100 J	620
SS-8	8/10/2000	26 U	100 U	ND	ND	ND	ND	ND
SS-9	08/10/00	NA	NA	ND	ND	ND	ND	0.59
SS-10	8/10/2000	NA	NA	ND	ND	ND	ND	ND
SS-11	08/10/00	NA	NA	ND	ND	ND	ND	ND
Screening Criteria								
Reliable Consensus-Based PEC		NV	NV	NV	NV	NV	NV	1,050
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	NV	NV	NV	NV

notes:

NV: no established value

PAHs: polynuclear aromatic hydrocarbons

µg/kg: micrograms per kilogram

ND: not detected above method reporting limit

shaded concentrations exceed screening criteria

PECs: Probably Effects Concentration from McDonald et al (2000)

NA: not analyzed

Table 2 (cont'd)
TPH, PAHs, and VOCs in Surface Soil (0-0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM					
		Benzo(a)-pyrene ug/kg	Benzo(b)-fluoranthene ug/kg	Benzo(ghi)-perylene ug/kg	Benzo(k)-fluoranthene ug/kg	Chrysene ug/kg	Dibenz(a,h)-anthracene ug/kg
SS-12	08/20/03	330	303	381	277	281	268
SS-13	08/20/03	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	66.3	81.1	103	40.1	65.9	26.8 U
SS-15	08/20/03	171	181	146	147	190	45.6 U
SS-16	08/20/03	361	297	472	253	274	79
SS-17	08/20/03	244	254	219	192	201	56.2
SS-18	08/20/03	129	165	131	96.3	124	31.9
SS-19	10/15/03	18.6	17	13.4 U	18.3	22.1	13.4 U
SS-20	10/15/03	141	120	124	130	153	25.5
SS-21	10/15/03	692	541	583	541	631	117
SS-1	8/11/2000	ND	ND	ND	ND	ND	ND
SS-2	8/11/2000	0.91	0.87	0.78	0.79	0.89	ND
SS-3	8/10/2000	ND	ND	ND	ND	ND	ND
SS-4	8/10/2000	NA	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	ND	ND	ND
SS-6	08/10/00	ND	ND	ND	ND	ND	ND
SS-7	08/09/00	470	520	290	220	ND	66
SS-8	8/10/2000	ND	ND	ND	ND	ND	ND
SS-9	08/10/00	0.79	1.10	0.54	0.92	0.83	ND
SS-10	8/10/2000	ND	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.34	ND	ND	0.35	ND
Screening Criteria							
Reliable Consensus-Based PEC		1,450	NV	NV	NV	1,290	NV
DEQ Level II SLV Sediment —Bioaccumulation		100	NV	NV	NV	NV	NV

notes:

NV: no established value

PAHs: polynuclear aromatic hydrocar

ug/kg: micrograms per kilogram

ND: not detected above method repo

Table 2 (cont'd)
TPH, PAHs, and VOCs in Surface Soil (0-0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM				
		Dimethyl-naphthalene ug/kg	Fluoranthene ug/kg	Fluorene ug/kg	Indeno(1,2,3-cd)-pyrene ug/kg	Naphthalene ug/kg
SS-12	08/20/03	ND	337	268	282	268
SS-13	08/20/03	ND	13.4 U	13.4 U	13.4 U	13.4 U
SS-14	08/20/03	ND	89.4	26.8 U	70.3	26.8 U
SS-15	08/20/03	ND	323	57.5	127	63.3
SS-16	08/20/03	ND	369	51	337	26.8 U
SS-17	08/20/03	ND	271	39	181	13.4 U
SS-18	08/20/03	ND	165	30.4	108	26.8 U
SS-19	10/15/03	ND	48.4	34.4	13.4 U	13.4 U
SS-20	10/15/03	ND	156	14.3	102	13.4 U
SS-21	10/15/03	ND	957	47.7	466	33.5 U
SS-1	8/11/2000	ND	ND	ND	ND	ND
SS-2	8/11/2000	ND	1.4	ND	0.68	ND
SS-3	8/10/2000	ND	ND	ND	ND	ND
SS-4	8/10/2000	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	ND	ND
SS-6	08/10/00	ND	ND	ND	ND	ND
SS-7	08/09/00	0.70 J	840 J	44	390	3 J
SS-8	8/10/2000	ND	0.44	ND	ND	ND
SS-9	08/10/00	ND	1.30	ND	0.64	ND
SS-10	8/10/2000	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.59	ND	ND	ND
Screening Criteria						
Reliable Consensus-Based PEC		NV	NV	NV	NV	561
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	NV	NV

notes:

NV: no established value

PAHs: polynuclear aromatic hydrocar

ug/kg: micrograms per kilogram

ND: not detected above method repo

Table 2 (cont'd)
TPH, PAHs, and VOCs in Surface Soil (0-0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	PAHs by EPA Method 8270-SIM			VOCs by EPA Method 8260B	
		Phenanthrene ug/kg	Pyrene ug/kg	Total PAHs ^h ug/kg	Acetone ug/kg	Trichloro- fluoromethane ug/kg
SS-12	08/20/03	268	391	4,726	NA	NA
SS-13	08/20/03	13.4 U	13.4 U	214.4 U	NA	NA
SS-14	08/20/03	56.6	94.8	874.6	NA	NA
SS-15	08/20/03	250	323	2,289.3	NA	NA
SS-16	08/20/03	132	497	3,514.3	NA	NA
SS-17	08/20/03	134	295	2,362.2	NA	NA
SS-18	08/20/03	84.6	177	1,462	NA	NA
SS-19	10/15/03	29.5	43.7	367.5	NA	NA
SS-20	10/15/03	60.2	172	1,367.7	NA	NA
SS-21	10/15/03	476	1,180	6,950.2	NA	NA
SS-1	8/11/2000	ND	ND	ND	ND	ND
SS-2	8/11/2000	0.67	ND	7.64	ND	ND
SS-3	8/10/2000	ND	ND	ND	NA	NA
SS-4	8/10/2000	NA	NA	NA	NA	NA
SS-5	8/10/2000	ND	ND	ND	NA	NA
SS-6	08/10/00	ND	0.65	0.65	66	ND
SS-7	08/09/00	490 J	830 J	4,999	ND	ND
SS-8	8/10/2000	ND	ND	0.44	ND	ND
SS-9	08/10/00	0.52	0.9	8.13	ND	10
SS-10	8/10/2000	ND	ND	ND	ND	ND
SS-11	08/10/00	ND	0.47	1.75	NA	NA
Screening Criteria						
Reliable Consensus-Based PEC		1,170	1,520	22,280	NV	NV
DEQ Level II SLV Sediment —Bioaccumulation		NV	NV	NV	290	NV

notes:

NV: no established value

PAHs: polynuclear aromatic hydrocar

ug/kg: micrograms per kilogram

ND: not detected above method repo

Table 3
Butyltins in Surface Soil (0–0.5 bgs)
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Tetra-n-butyltin ug/kg		Tri-n-butyltin Cation ug/kg	Di-n-butyltin Cation ug/kg	n-butyltin Cation ug/kg
SS-1	8/11/2004	3	U	8	2	3
SS-2	8/11/2004	3	U	120	15	12
SS-7	8/9/2004	3	U	0.5 J	0.4 J	1 U
SS-9	8/10/2004	3	U	110	29	27
SS-10	8/11/2004	3	U	2	0.5 J	1 U
Screening Criteria						
Sediment PEC		NV		NV	NV	NV
DEQ Level II SLV Sediment —Bioaccumulation		NV		190	NV	NV

Table 4
Total/Dissolved Metals* in Groundwater
Advanced American Construction Properties
Portland, Oregon

Sample Location	Sample Date	Antimony mg/L	Arsenic mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Copper mg/L	Lead mg/L
MW-1	04/15/03	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/22/03	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.0010 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-2	04/15/03	0.001 U	0.00139	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/22/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-3	04/15/03	0.001 U	0.0012	0.001 U	0.001 U	0.00183	0.00218	0.00117
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00105	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-4	04/15/03	0.00101	0.0195	0.00357	0.00202	0.0182	0.43500	0.692
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00123	0.00200 U	0.001 U
	04/01/04	0.001 U	0.0051	0.001 U	0.001 U	0.001 U	0.00200 U	0.001 U
MW-5	04/15/03	0.001 U	0.00286	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	07/24/03	0.001 U	0.001 U	0.001 U	0.001 U	0.00114	0.002 U	0.001 U
	04/01/04	0.001 U	0.00159	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
MW-6	04/15/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00227	0.00173
	07/22/03	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U
	04/01/04	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.002 U	0.001 U
Screening Criteria								
DEQ SLV		1.6	0.15	0.0053	0.0022	0.011 (IV)/ 0.074 (III)	0.009	0.0025

NOTES:

*: Total metals were analyzed for the April 2003 sampling event, dissolved metals were analyzed for the July 2003 and April 2004 sampling events.

mg/L: milligrams per liter

Shaded concentrations exceed screening criteria.

DEQ Level II SLVs, aquatic: Oregon Department of Environmental Quality Guidance for Ecological Risk Assessment, December 2001.

Table 4
Total/Dissolved Metals* in Groundwater
Advanced American Construction Properties
Portland, Oregon

Sample Location	Sample Date	Mercury mg/L	Nickel mg/L	Selenium mg/L	Silver mg/L	Thallium mg/L	Zinc mg/L
MW-1	04/15/03	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
	07/22/03	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-2	04/15/03	0.0002 U	0.002 U	0.001 U	0.00138 U	0.001 U	0.005 U
	07/22/03	0.0002 U	0.002 U	0.00123	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-3	04/15/03	0.0002 U	0.00413	0.001 U	0.001 U	0.001 U	0.00774
	07/24/03	0.0002 U	0.002 U	0.00171	0.001 U	0.001 U	0.005 U
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.00821
MW-4	04/15/03	0.000973	0.139	0.00103	0.01490	0.001 U	0.063500
	07/24/03	0.000200 U	0.002 U	0.00329	0.00100 U	0.001 U	0.00500 U
	04/01/04	0.000200 U	0.002 U	0.00161	0.00100 U	0.001 U	0.00500 U
MW-5	04/15/03	0.0002 U	0.002 U	0.00119	0.001 U	0.001 U	0.005 U
	07/24/03	0.0002 U	0.002 U	0.00168	0.001 U	0.001 U	0.00758
	04/01/04	0.0002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.005 U
MW-6	04/15/03	0.0002 U	0.00303	0.001 U	0.001 U	0.001 U	0.005 U
	07/22/03	0.0002 U	0.0031	0.00105	0.001 U	0.001 U	0.00683
	04/01/04	0.0002 U	0.00399	0.001 U	0.001 U	0.001 U	0.005 U
Screening Criteria							
DEQ SLV		0.00077 (elemental, total)	0.052	0.005	0.00012	0.04	0.12
NOTES: *: Total metals were analyzed for the April 2003 samp mg/L: milligrams per liter Shaded concentrations exceed screening criteria. DEQ Level II SLVs, aquatic: Oregon Department of E							

Table 5
Summary of Groundwater Analytical Data—PAHs
Advanced American Construction Properties
Portland, Oregon

Sample Location	Date	Acenaphthene ug/L	Benzo (ghi) perylene ug/L	Chrysene ug/L	Fluoranthene ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L	Others ug/L
MW-1	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
MW-2	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
MW-3	04/15/03	0.490	0.1 U	0.1 U	0.795	0.1 U	0.1 U	0.117	1.11	ND
	07/24/03	1.060	0.1 U	0.1 U	1.02	0.157	0.1 U	1.400	1.48	ND
	04/01/04	0.136	0.1 U	0.1 U	0.188	0.1 U	0.1 U	0.100	0.293	ND
MW-4	04/15/03	0.808	0.100	0.113	0.168	0.1 U	0.135	0.134	0.649	ND
	07/24/03	1.14	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.274	ND
	04/01/04	0.675	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.178	ND
MW-5	04/15/03	0.196	0.1 U	0.1 U	0.134	0.1 U	0.1 U	0.277	0.666	ND
	07/24/03	0.725	0.1 U	0.1 U	0.269	0.1 U	0.1 U	0.693	1.03	ND
	04/01/04	0.189	0.1 U	0.1 U	0.142	0.1 U	0.1 U	0.109	0.751	ND
MW-6	04/15/03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
	07/22/03	0.402	0.1 U	0.1 U	0.103	0.1 U	0.1 U	0.1 U	0.1 U	ND
	04/01/04	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	ND
Screening Criteria										
DEQ SLV		520	NV	NV	6.160	3.9	620	6.3	NV	NV

Notes:

PAHs: polynuclear aromatic hydrocarbons

ug/L: micrograms per liter

ND: Not detected above laboratory reporting methods.

DEQ Level II SLVs, aquatic: Oregon Department of Environmental Quality Guidance for Ecological Risk Assessment, December 2001.

Shaded concentrations exceed screening criteria.

Table 6
Metals in Surface Water
Advanced American Construction Properties
Portland, Oregon

Sample Location	Aluminum ug/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Calcium ug/L	Chromium ug/L
SW-1	42.2 B	ND	ND	19.4	ND	ND	14,700	ND
SW-2	ND	ND	ND	5.2	ND	ND	14,700	ND
Screening Criteria								
DEQ SLV	87	1,600	150	4	5.3	2.2	116,000	11 (IV)/ 74 (III)

Notes:

µg/L: micrograms per liter

ND: Not detected above laboratory reporting methods.

Shaded concentrations exceed screening criteria.

DEQ Level III SLVs, aquatic; Oregon Department of Environmental Quality Guidance for Ecological Risk Assessment, December 2001.

Table 6
Metals in Surface Water
Advanced American Construction Properties
Portland, Oregon

Sample Location	Cobalt ug/L	Copper ug/L	Iron ug/L	Lead ug/L	Magnesium ug/L	Manganese ug/L	Mercury ug/L	Nickel ug/L
SW-1	ND	ND	97.5	ND	4,640	16	ND	ND
SW-2	ND	ND	20.9	ND	4,640	4.3 B	ND	ND
Screening Criteria								
DEQ SLV	23	9	1,000	2.5	82,000	120	0.77 (elemental, total)	52

Notes:

µg/L: micrograms per liter

ND: Not detected above laboratory

Shaded concentrations exceed

DEQ Level II SLVs, aquatic: Ore

Table 6
Metals in Surface Water
Advanced American Construction Properties
Portland, Oregon

Sample Location	Potassium ug/L	Selenium ug/L	Silver ug/L	Sodium ug/L	Thallium ug/L	Vanadium ug/L	Zinc
SW-1	ND	ND	ND	7,450	ND	4.9 B	4.4 B
SW-2	ND	ND	ND	5,720	ND	ND	ND
Screening Criteria							
DEQ SLV	53,000	5	0.12	680,000	40	20	120

Notes:

µg/L: micrograms per liter

ND: Not detected above laborato

Shaded concentrations excee

DEQ Level III SLVs, aquatic: Ore

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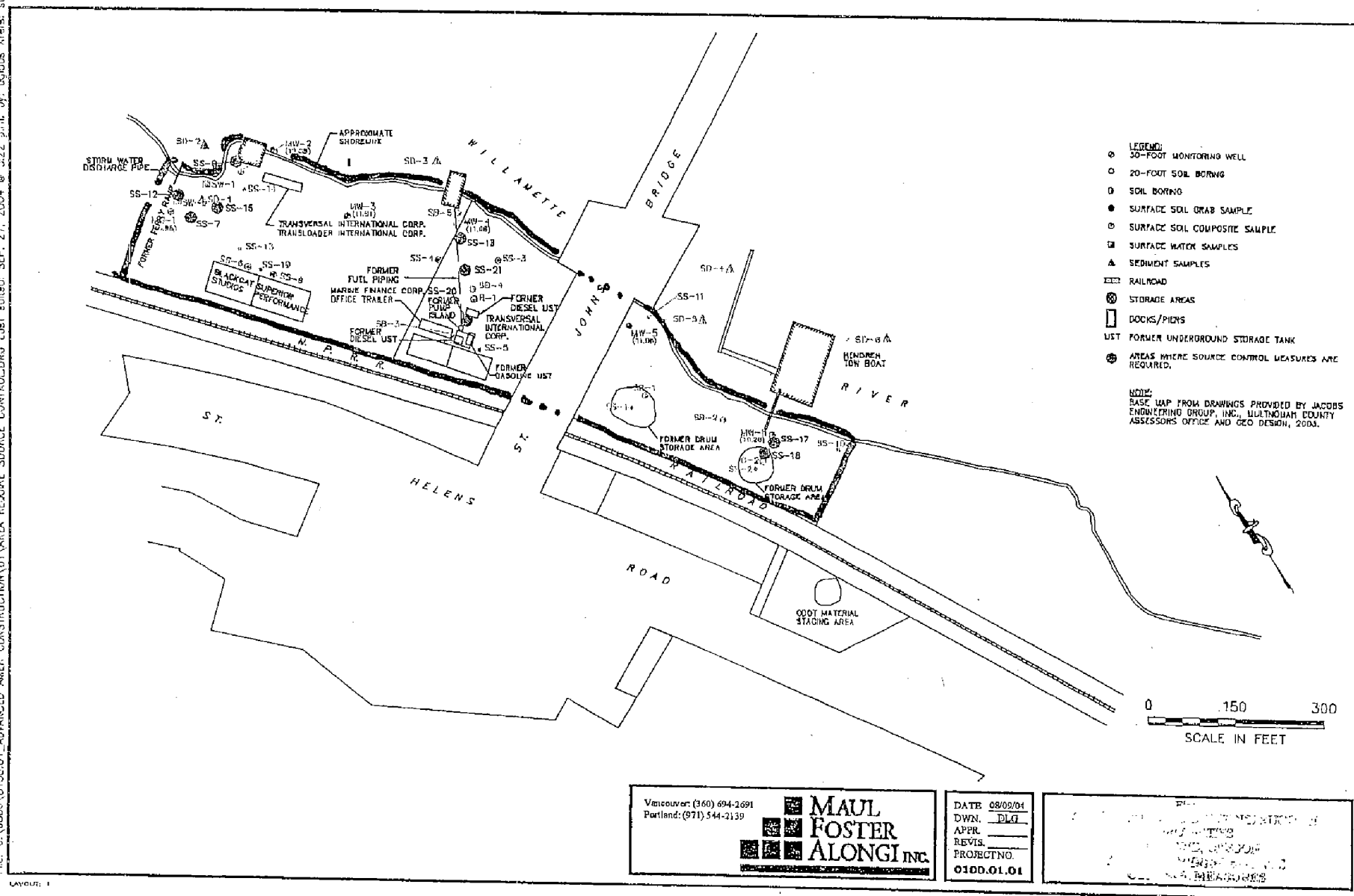
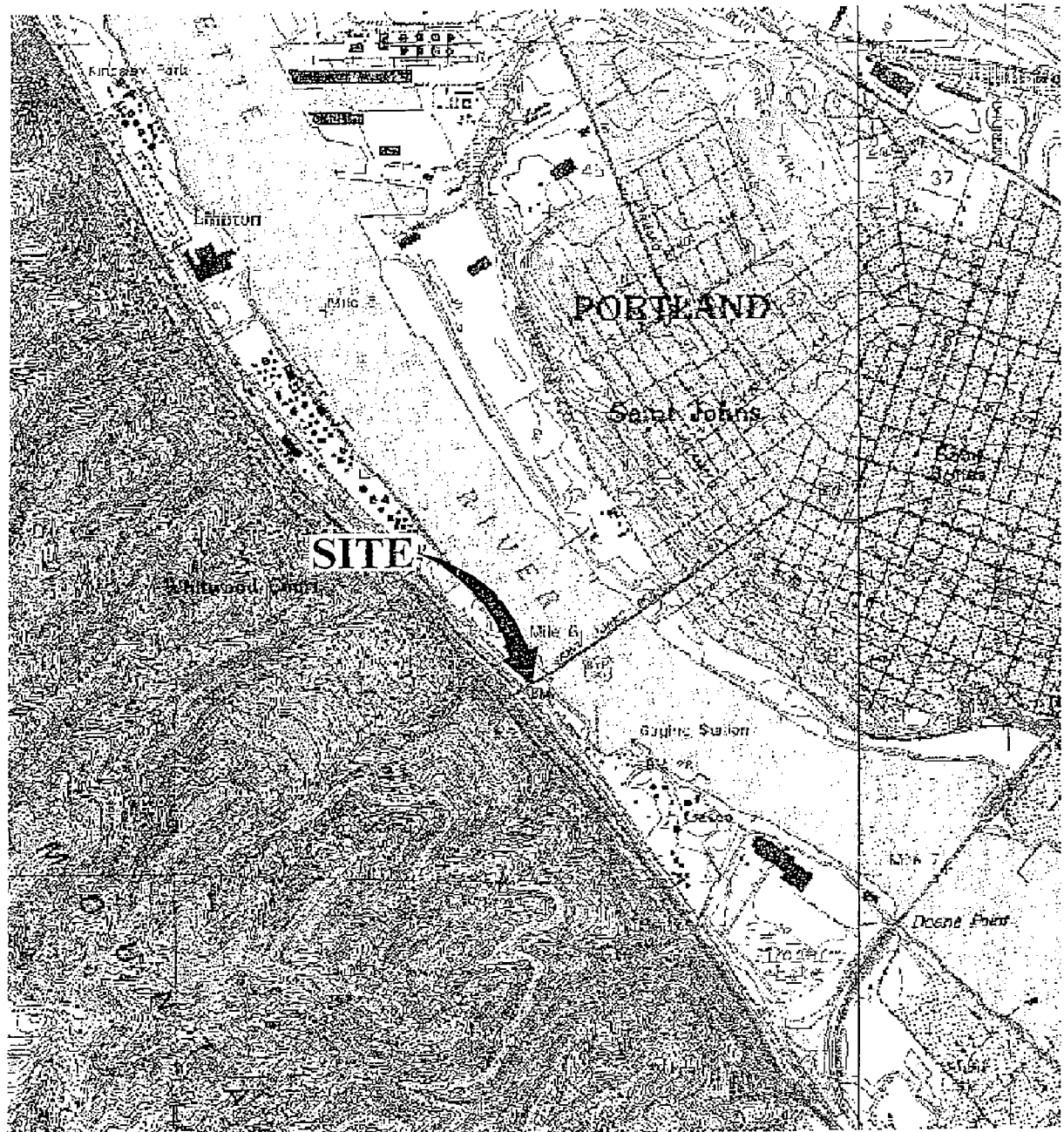


Figure 2: Surface Soil Sample Locations with Screening Criteria Exceedences

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BASE MAP PREPARED FROM DELORME 3-D TOPOQUADS (1999).

SITE ADDRESS: 8444 NW ST. HELENS ROAD, PORTLAND, OREGON
NE1/4 SE 1/4 OF S11, T1N, R1W



Vancouver: (360) 694-2691		MAUL FOSTER ALONGI INC.
Portland: (971) 544-2139		

DATE	08/09/04
DWN.	DLG
APPR.	
REVIS.	
PROJECT NO.	0100.01.01

Figure 1 ADVANCED AMERICAN CONSTRUCTION PROPERTIES PORTLAND, OREGON SITE LOCATION

LAYOUT: 1

AAC001039

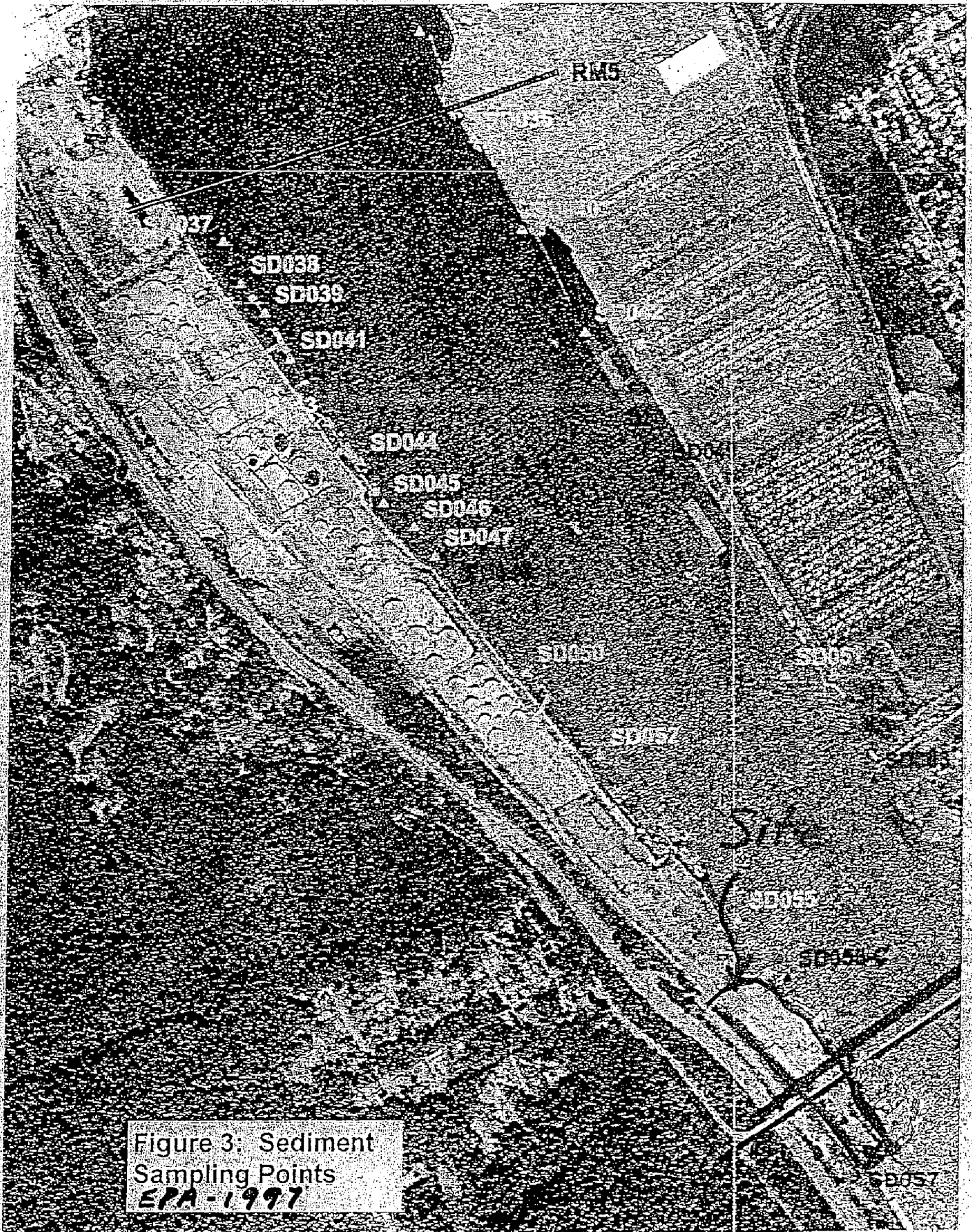


Figure 3: Sediment
Sampling Points
EPA-1997